20 MHz OSCILLOSCOPE

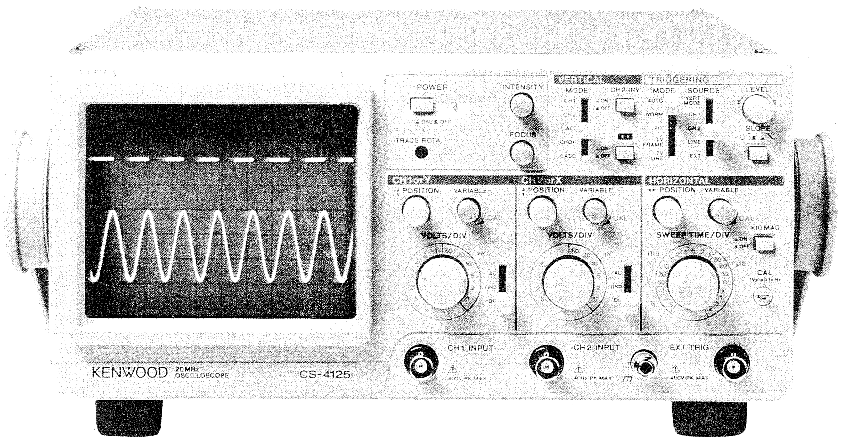
CS-4125

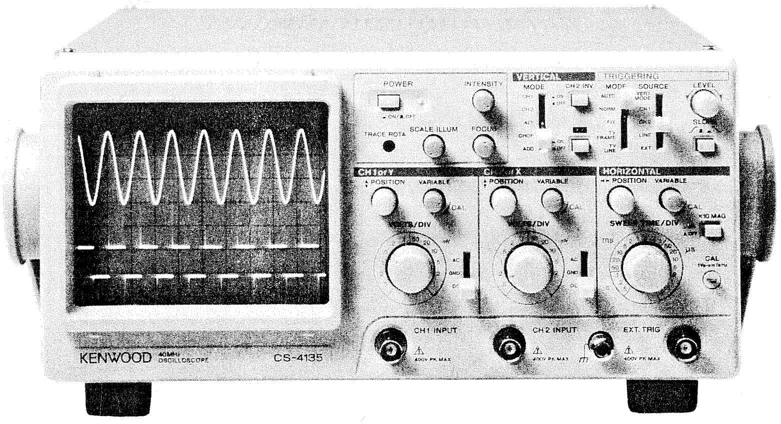
40 MHz OSCILLOSCOPE

CS-4135

SERVICE MANUAL

KENWOOD CORPORATION


POWER
INTENSITY
VERTICAL
MODE
CH2 INV
TRIGGERING
SOURCE
LEVEL
TRACE ROTA
FOCUS
SLOPE
CH1 or Y
POSITION
VARIABLE
CAL
CH2 or X
HORIZONTAL
VOLTS/DIV
SWEEP TIME/DIV
×10 MAG
CH1 INPUT
CH2 INPUT
EXT. TRIG
KENWOOD
20 MHz OSCILLOSCOPE
CS-4125


POWER
INTENSITY
VERTICAL
TRIGGERING
TRACE ROTA
SCALE ILLUM
FOCUS
CH1 or Y
HORIZONTAL
CH1 INPUT
CH2 INPUT
EXT. TRIG
KENWOOD
40 MHz OSCILLOSCOPE
CS-4135

WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

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SPECIFICATIONS

ITEM		CS-4125	CS-4135
CRT :			
Type :		Rectangular with internal graticule	
Acceleration Voltage:		Approx. 2 kV	Approx. 12 kV
Display Area :		8 × 10 div (1 div = 10mm)	
VERTICAL AXIS (CH1 and CH2) :			
Sensitivity :		1mV, 2mV/div ±5%, 5mV/div to 5 V/div ±3%	
Attenuator :		1-2-5 step, 12 ranges with fine adjustment	
Input Impedance :		1 MΩ± 2 %, Approx. 22 pF	1 MΩ± 2 %, Approx. 23 pF
Frequency Response :			
5 mV/div to 5 V/div	DC	DC to 20 MHz, within - 3 dB	DC to 40 MHz, within - 3 dB
	AC	10 Hz to 20 MHz, within - 3 dB	10 Hz to 20 MHz, within - 3 dB
1 mV/div , 2 mV/div	DC	DC to 5 MHz, within - 3dB	
	AC	5 Hz to 5 MHz, within - 3dB	
Rise Time :			
5 mV/div to 5 V/div :		Approx. 17.5 ns (20 MHz)	Approx. 8.75 ns (40 MHz)
1 mV/div, 2mV/div :		Approx. 70 ns (5 MHz)	
Crosstalk :		- 40 dB maximum	
Operating Modes :		CH1 : CH1 single trace CH2 : CH2 single trace ALT : Alternating display of two signals CHOP : Chopped display of two signals ADD : Display of combined CH1 + CH2 waveforms	
CHOP Frequency :		Approx. 150 kHz	
Channel Polarity :		Normal or inverted, channel 2 only inverted	
⚠Maximum Input Voltage:		800Vp-p or 400 V (DC + ACpeak)	
HORIZONTAL AXIS :			
Sensitivity :		Same as vertical axis (CH2)	
Input impedance :		Same as vertical axis (CH2)	
Frequency response :		DC : DC to 500 kHz, within - 3 dB	
		AC : 10Hz to 500kHz, within - 3 dB	
X-Y Phase Difference :		3° or less (at 50 kHz or less)	
Operating Modes :		X-Y operation is selectable with MODE switch CH1 : Y-axis CH2 : X-axis	
⚠Maximum Input Voltage :		Same as vertical axis (CH2)	

SPECIFICATIONS

<table>
<tr><th>ITEM</th><th>CS-4125</th><th>CS-4135</th></tr>
<tr><td colspan="3">SWEEP SYSTEM :</td></tr>
<tr><td rowspan="2">Sweep Modes :</td><td colspan="2">NORM : Triggered sweep</td></tr>
<tr><td colspan="2">AUTO : Auto free run with no signal input</td></tr>
<tr><td rowspan="2">Sweep Time :</td><td>0.5 μ s/div to 0.5 s/div ± 3%,
(0.2 μ s/div : UNCAL)</td><td>0.5 μ s/div to 0.5 s/div ± 3%,</td></tr>
<tr><td colspan="2">1-2-5 step, 20 ranges with fine adjustment</td></tr>
<tr><td>Sweep Magnification :</td><td>10 × magnification, ±5%
(20ns/div : UNCAL)</td><td>10 × magnification, ±5%</td></tr>
<tr><td>Linearity</td><td>±3%, (0.2 μ s/div : UNCAL) (±5% at × MAG, 20 ns/div : UNCAL)</td><td>±3%, (±5% at × 10 MAG)</td></tr>
<tr><td colspan="3">TRIGGERING :</td></tr>
<tr><td rowspan="5">Triggering Source :</td><td colspan="2">VERT MODE : Input signal selection with VERTICAL MODE control</td></tr>
<tr><td colspan="2">CH1 : CH1 input signal</td></tr>
<tr><td colspan="2">CH2 : CH2 input signal</td></tr>
<tr><td colspan="2">LINE : Commercial-use power source</td></tr>
<tr><td colspan="2">EXT : Signal input through EXT. TRIG terminal</td></tr>
<tr><td>External Trigger :</td><td colspan="2"></td></tr>
<tr><td>Input impedance :</td><td colspan="2">1M Ω, Approx. 22 pF</td></tr>
<tr><td>⚠ Maximum input voltage:</td><td colspan="2">800 Vp-p or 400 V(DC + ACpeak)</td></tr>
<tr><td rowspan="3">Trigger Coupling Modes :</td><td colspan="2">AUTO, NORM and FIX are capacitively coupled</td></tr>
<tr><td colspan="2">TV-FRAME : Vertical sync pulses of a composite video signal are selected for triggering.</td></tr>
<tr><td colspan="2">TV-LINE : Horizontal sync pulses of a composite video signal are selected for triggering.</td></tr>
<tr><td colspan="3">Trigger Sensitivity :</td></tr>
</table>

CS-4135

MODE	SIGNAL FREQ.	SOURCE	
		VERT, CH1, CH2	EXT
NORM	10Hz to 20 MHz 20MHz to 40MHz	1.5 div 2 div	0.25 V p-p 0.3 V p-p
AUTO	Same as above specs at 50 Hz or above		
TV-F,TV-L	Composite video Signal	1 div	0.2 Vp-p
FIX	50 Hz to 40 MHz	2 div	0.5 Vp-p

SPECIFICATIONS

ITEM	CS-4125	CS-4135
Trigger Sensitivity :		

CS-4125

MODE	SIGNAL FREQ.	SOURCE	
		VERT, CH1, CH2	EXT
NORM	10Hz to 5 MHz 5MHz to 20MHz	1 div 1.5 div	0.2 V p-p 0.3 V p-p
AUTO	Same as above specs at 50 Hz or above		
TV-F,TV-L	Composite video Signal	1 div	0.2 Vp-p
FIX	50 Hz to 20 MHz	2 div	0.5 Vp-p

CALIBRATED SIGNALS :		
Waveform :	Positive square eave	
Voltage :	1 Vp-p ±3%	
Frequency :	Approx. 1 kHz	
INTENSITY MODULATION :		
Sensitivity :	TTL level, decreases brightness	
Input Impedance :	Approx. 5 kΩ	
Usable Frequency Range:	DC to 3.5 MHz	
△ Maximum Input Voltage:	84 Vp-p or 42 V(DC + ACpeak)	
CH1 SIGNAL OUTPUT :		
Output Voltage :	Approx. 50 mV/div (at into 50 Ω load)	
Output Impedance :	Approx. 50 Ω	
Frequency Response :	100Hz to 10 MHz, ±3 dB (into 50 Ω load)	100Hz to 10 MHz, ±3 dB (into 50 Ω load)
TRACE ROTATION :		
Adjustment :	Adjustable semi-fixed resister on the front panel	
DIMENSIONS :		
(W × H × D)	300(343) × 140(159) × 415(431)mm ( )dimensions include protrusion from basic outline dimensions.	
WEIGHT :		
	Approx. 7 kg	Approx. 7.5 kg
ENVIRONMENTAL :		
Within specifications temp./hum. range :	10 to 35 ℃/ 85 % RH or less	
Full operation temp./hum. range :	0 to 40 ℃/ 85 % RH or less	

SPECIFICATIONS

ITEM	CS-4125	CS-4135
ENVIRONMENTAL :		
	Indoor Use Only	
	Altitude up to 2000 m	
	OVERVOLTAGE CATEGORY II	
	POLLUTION DEGREE 2	
LINE VOLTAGE/FREQUENCY :		
	AC 100 V (90V to 110V), AC 120 V (108V to 132V), AC 220 V (198V to 242V), AC 230V (207V to 253V), 50/60Hz	
POWER CONSUMPTION :		
	Max. 35 W	Max. 35 W
ACCESSORIES :		
Probe :	PC-41 X 2	
Instruction manual :	1	
Power cord :	1	
Replacement fuse :	1	
REGULATORY INFORMATION :		
EMI :	EN55011(1991) CLASS B	
Immunity :	IEC801-2(1991) 8kVAD	
	IEC801-3(1984) 3V/m	
	IEC801-4(1988)	

PC-41 probe specifications :
(The table below shows the specifications when an input resistance of 1MΩ ± 1% is connected to the oscilloscope.)

ITEMS	×1	×10
Input resistance	1MΩ±2%	10MΩ±2%
Input capacitance	200 pF or less (Probe only)	22 pF ± 10 %
Attenuation ratio	1/1	1/10 ±3%
Frequency range	DC to 6 MHz (±3 dB)	DC to 60 MHz (±3 dB)
Applicable capacitance	—	20 to 45 pF
Input withstand voltage	DC 600 V	

■ The above specifications are subject to change without notice.

CS-4125 SAFETY

SAFETY

Before connecting the instrument to a power source, carefully read the following information, then verify that the proper power cord is used and the proper line fuse is installed for power source. The specified voltage is shown at the fuse holder of the AC inlet. If the power cord is not applied for specified voltage, there is always a certain amount of danger from electric shock.

Line voltage

This instrument operates using ac-power input voltages that 100/120/220/230 V at frequencies from 50 Hz to 60 Hz.

Power cord

The ground wire of the 3-wire ac power plug places the chassis and housing of the oscilloscope at earth ground. Do not attempt to defeat the ground wire connection or float the oscilloscope; to do so may pose a great safety hazard. The appropriate power cord is supplied by an option that is specified when the instrument is ordered.
The optional power cords are shown as follows in Fig. 1.

Line fuse

The fuse holder is located on the rear panel and contains the line fuse. Verify that the proper fuse is installed by replacing the line fuse.

Voltage conversion

This oscilloscope may be operated from either a 100 V to 230 V, 50/60 Hz power source. Use the following procedure to change from 100 to 230 volt operation or vice versa.

1. Remove the fuse holder.
2. Replace fuse F 1 with a fuse of appropriate value, 800 m amp for 100 VAC to 120 VAC operation. 500 m amp for 220 VAC to 230 VAC operation.
3. Reinsert it for appropriate voltage range.
4. When performing the reinsertion of fuse holder for the voltage conversion, the appropriate power cord should be used. (See Fig.1.)

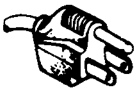
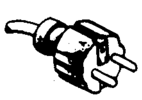
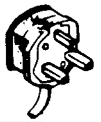
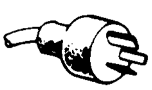
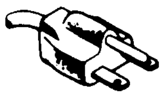
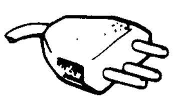
Plug configuration	Power cord and plug type	Factory installed instrument fuse	Line cord plug fuse	Parts No. for power cord
	North American 120 volt/60 Hz Rated 15 amp (12 amp max; NEC)	800 mA, 250 V Fast blow 5 × 20 mm	None	E30-1951-05
	Universal Europe 220 volt/50 Hz Rated 16 amp	500 mA, 250 V Fast blow 5 × 20 mm	None	E30-1952-05
	U.K. 240 volt/50 Hz Rated 13 amp	500 mA, 250 V Fast blow 5 × 20 mm	5 A	E30-1963-05
	Australian 240 volt/50 Hz Rated 10 amp	500 mA, 250 V Fast blow 5 × 20 mm	None	E30-1953-15
	North American 240 volt/60 Hz Rated 15 amp (12 amp max; NEC)	500 mA, 250 V Fast blow 5 × 20 mm	None	—
	Switzerland 240 volt/50 Hz Rated 10 amp	500 mA, 250 V Fast blow 5 × 20 mm	None	—

Fig. 1 Power Input Voltage Configuration

CS-4135 SAFETY

SAFETY

Before connecting the instrument to a power source, carefully read the following information, then verify that the proper power cord is used and the proper line fuse is installed for power source. The specified voltage is shown at the fuse holder of the AC inlet. If the power cord is not applied for specified voltage, there is always a certain amount of danger from electric shock.

Line voltage

This instrument operates using ac-power input voltages that 100/120/220/230 V at frequencies from 50 Hz to 60 Hz.

Power cord

The ground wire of the 3-wire ac power plug places the chassis and housing of the oscilloscope at earth ground. Do not attempt to defeat the ground wire connection or float the oscilloscope; to do so may pose a great safety hazard. The appropriate power cord is supplied by an option that is specified when the instrument is ordered.
The optional power cords are shown as follows in Fig. 1.

Line fuse

The fuse holder is located on the rear panel and contains the line fuse. Verify that the proper fuse is installed by replacing the line fuse.

Voltage conversion

This oscilloscope may be operated from either a 100 V to 230 V, 50/60 Hz power source. Use the following procedure to change from 100 to 230 volt operation or vice versa.

1. Remove the fuse holder.
2. Replace fuse F 1 with a fuse of appropriate value, 500 m amp for 100 VAC to 120 VAC operation. 315 m amp for 220 VAC to 230 VAC operation.
3. Reinsert it for appropriate voltage range.
4. When performing the reinsertion of fuse holder for the voltage conversion, the appropriate power cord should be used. (See Fig.1.)

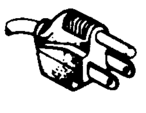
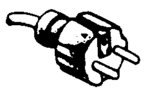
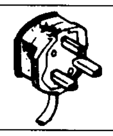
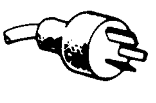
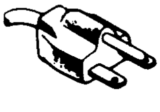
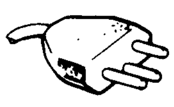
Plug configuration	Power cord and plug type	Factory installed instrument fuse	Line cord plug fuse	Parts No. for power cord
	North American 120 volt/60 Hz Rated 15 amp (12 amp max; NEC)	500 mA, 250 V Slow blow 5 x 20 mm	None	E30-1951-05
	Universal Europe 220 volt/50 Hz Rated 16 amp	315 mA, 250 V Slow blow 5 x 20 mm	None	E30-1952-05
	U.K. 240 volt/50 Hz Rated 13 amp	315 mA, 250 V Slow blow 5 x 20 mm	5 A	E30-1963-05
	Australian 240 volt/50 Hz Rated 10 amp	315 mA, 250 V Slow blow 5 x 20 mm	None	E30-1953-15
	North American 240 volt/60 Hz Rated 15 amp (12 amp max; NEC)	315 mA, 250 V Slow blow 5 x 20 mm	None	–
	Switzerland 240 volt/50 Hz Rated 10 amp	315 mA, 250 V Slow blow 5 x 20 mm	None	–

Fig. 1 Power Input Voltage Configuration

CS-4125 (~S/NO.7121000) CIRCUIT DESCRIPTION

Vertical attenuator

The CH1 (CH2) input signal passes through the AC-GND-DC switch and enters the 1st ATT (1/1, 1/10, 1/100).

The 1st ATT is composed of 2 relays and a passive ATT element. The signal output from the 1st ATT enters the head amp composed of Q101 (201) to Q106 (206) and IC101 (201). This head amp is a 1/1 buffer amplifier of the feed-forward type with low temperature drift and an input impedance of 1 megohm. After the impedance of the signal has been converted with the head amp, the signal is sent to the 2nd ATT (1/1, 1/2, 1/4, 1/10).

The 2nd ATT is also composed of 2 relays and a passive ATT element similarly to the 1st ATT. With both the 1st and 2nd ATTs, the sensitivities can be switched with the panel unit's switch which activates a relay through drive transistors (Q151 to 154).

Vertical preamplifier

The vertical preamp boosts the signal Input from the 2nd ATT with a gain of about 5x using a differential cascode amp composed of Q107, 111 and 112 (Q207, 211 and 212). Q108 (Q208) is a constant current circuit, and Q109 (Q209) forms the variable gain circuit which varies the resistance between the drain and source according to the voltage applied to the gate. K105 (K205) is switched OFF when the selected range is 1 mV or 2 mV so the gain at the differential cascode amp of Q107, 111 and 112 is boosted further by 5 times (to a total of 25x). Q110 (Q210) is an emitter-follower, the trigger signal is obtained from the output from this stage, supplied through emitter-follower Q113 and sent from Q114 to the TRIG circuit in the form of current signal. With CH2 only, the X output is also extracted, sent through the amp formed with Q224 and 231 and applied to the Horizontal signal selector. With CH1, the CH1 OUT signal is taken from the input to this stage. The signal output from the 2nd amp is sent to the position amp. The position amp is a differential cascode amp composed of Q115 to 118 (Q215 to 218). The position current from the panel unit is applied to the collector of Q115 (Q215) and converted in current for use in varying the vertical position. With CH2 only, a polarity inverter circuit is formed by Q221 to Q223 and inverts the signal polarity by grounding the base of Q223.

At the channel selector, the signal turning the anodes of CH1 D101 and 102 (CH2 - D201 and 202) "H" is selected and sent as the current signal to the vertical final amp in the final unit.

Vertical final amplifier

The current signal supplied from the position amp is input to the feedback amp composed of Q102 and 103, converted into a voltage signal and sent to the vertical output amp. Q101 is turned ON in the ADD mode to absorb the excess DC operation current.

The vertical output amp is feedback amp with a constant current load, and Q112 and 113 in the final stage are driven by complementary emitter-followers Q106 to 109. Q110 and 111 form the constant current load. The vertical output amp has a gain of about 65x.

Trigger circuit

The trigger source selector switch on the panel unit is used to select the desired trigger signal by operating the trigger switching circuit composed of IC404, Q402 to 407 and D401 to 404. The trigger source switching circuit is connected to the CH1 and CH2 trigger signals from the vertical circuitry, the LINE trigger signal from the power supply circuitry and the external trigger signal supplied through the buffer amp including Q301 to 303.

The selected trigger signal is sent through emitter-follower Q409 and into the trigger level setting circuit composed of Q419 to 421, Q434 and IC402. The trigger level setting circuit is a Schmitt circuit, the threshold level of which is variable with the TRIG LEVEL control on the panel unit.

The signal is also supplied to the TV sync separator circuit composed of Q410 to 412 and Q416 to 418 through C403. Q410, D406 and 407 form the polarity inverter, Q416 is the sync tip clamper and Q418 is the switch for separating the vertical sync signal. IC403a is used to select between the ordinary sync signal or TV sync signal and activate the sweep gate flip-flop IC401b.

Sweep circuit

The gate signal from IC401b turns Q427 ON-OFF in the AUTO or NORM mode to control the ramp wave generator circuit composed of IC407 to 410 and Q432 and 433. This is a constant-current charge type ramp circuit and the time constant is determined by combining R469 to 472, R474 to 477, C304 and 305 according to the code entered from the sweep time switch on the panel unit. In case the code indicates a value below 1 ms/div., the time constant adjustment circuit of Q305 is activated so VR301 and R310 are involved in the determination of the time constant.

In the X-Y mode, the ramp wave is not generated because the sweep gate is stopped by IC405d.

Q428 to 430 and IC205c and d determine the upper limit and hold-off time of the ramp wave.

The ramp wave becomes the sweep signal, which is sent through the buffer amp of Q307 and 308, input to the sweep signal-X signal switching circuit formed by Q309 to 312, selected and applied to the horizontal final amp in the final unit.

Horizontal final amplifier

The horizontal signal is input to Q215. The voltage corresponding to the horizontal position is input to Q202, then into the feedback amp with constant current load that is composed of Q205 to 212, and amplified to an amplitude large enough to drive the CRT.

Q203 and 204 are turned ON in the MAG mode to increase the gain to 10x the normal gain.

CS-4125 (~S/NO.7121000) CIRCUIT DESCRIPTION

CHOP oscillator

The CHOP oscillator circuit is composed of IC406c and d. IC403b selects the CHOP oscillator signal in the CHOP mode or sweep gate signal in the ALT mode, and the selected signal is used as the signal for switching channels.

IC406a and b inputs the signal from the CHOP oscillator and the opposite-phase signal of the sweep gate into the blanking amp in the final unit as the blanking signals.

High-voltage and blanking circuitry

Q401 oscillates by using the inductance of converter transformer T1. The oscillated voltage appears on the high-voltage coil and -1800 V is obtained from it by means of the voltage multiplying rectifier composed of C404, C405, D402 and D403 and control circuit composed of Q402 to 404. A CRT heater coil is also provided which lights the CRT heater through R401.

From the middle of the high-voltage coil, a voltage of about 300 Vp-p is extracted and modulated with the blanking signal. The blanking signal sent from the ATT unit passes through the blanking amp composed of Q409 to 411 and, together with the modulation signal, enters the DC regenerator circuit composed of D404 to 407, C411 and C412 to supply the intensity control signal to the G1 electrode of the CRT.

Q405 to 408 are used in focusing control, and a high withstanding voltage is obtained by connecting 4 transistors in series.

Low-voltage circuit

IC301 and 302 are used to control 4 voltage systems of +/-8 V, +5 V and +140 V based on -8 V. The +/-10 V voltages are unstable voltages used as the power supply for the high-voltage circuitry.

Other

Q351 and 352 in the final unit are used to drive the rotation coil. IC1 in the panel unit is the CAL signal oscillator circuit which generates a square wave of 1 Vp-p and about 1 kHz.

CS-4125/CS-4135 CIRCUIT DESCRIPTION

Vertical attenuator

The CH1 (CH2) input signal passes through the AC-GND-DC switch and enters the 1st ATT (1/1, 1/10, 1/100).

The 1st ATT is composed of 2 relays and a passive ATT element. The signal output from the 1st ATT enters the head amp composed of Q101 (201) to Q106 (206) and IC101 (201). This head amp is a 1/1 buffer amplifier of the feed-forward type with low temperature drift and an input impedance of 1 megohm. After the impedance of the signal has been converted with the head amp, the signal is sent to the 2nd ATT (1/1, 1/2, 1/4, 1/10).

The 2nd ATT is also composed of 2 relays and a passive ATT element similarly to the 1st ATT. With both the 1st and 2nd ATTs, the sensitivities can be switched with the panel unit's switch which activates a relay through drive transistors (Q151 to 154).

Vertical preamplifier

The vertical preamp boosts the signal Input from the 2nd ATT with a gain of about 4x using a differential cascode amp composed of Q107, 111 and 112 (Q207, 211 and 212). Q108 (Q208) is a constant current circuit, and Q109 (Q209) forms the variable gain circuit which varies the resistance between the drain and source according to the voltage applied to the gate. K105 (K205) is switched ON when the selected range is 1 mV or 2 mV so the gain at the differential cascode amp of Q107, 111 and 112 is boosted further by 5 times (to a total of 20x). Q110 (Q210) is an emitter-follower. The trigger signal is obtained from the emitter follower Q115, supplied through emitter-follower Q113 and sent from Q114 to the TRIG circuit in the form of current signal. With CH2 only, the X output is also extracted, sent through the amp formed with Q224 and 231 and applied to the Horizontal signal selector. With CH1, the CH1 OUT signal is taken from the input to this stage.

The position amp is a differential cascode amp composed of Q115 to 118 (Q215 to 218). The position current from the panel unit is applied to the collector of Q115 (Q215) and converted in current for use in varying the vertical position. With CH2 only, a polarity inverter circuit is formed by Q221 to Q223 and inverts the signal polarity by grounding the base of Q223.

At the channel selector, the signal turning the anodes of CH1 D101 and 102 (CH2 - D201 and 202) "H" is selected and sent as the current signal to the vertical final amp in the final unit.

Vertical final amplifier

The current signal supplied from the position amp is input to the feedback amp composed of Q102 and 103, converted into a voltage signal and sent to the vertical output amp. Q101 is turned ON in the ADD mode to absorb the excess DC operation current.

The vertical output amp is feedback amp with a constant current load, and Q112 and 113 in the final stage are driven by complementary emitter-followers Q106 to 109. Q110 and 111 form the constant current load. The vertical output amp has a gain of about 65x. [CS-4135 : about 35x].

Trigger circuit

The trigger source selector switch on the panel unit is used to select the desired trigger signal by operating the trigger switching circuit composed of IC404, Q402 to 407 and D401 to 404. The trigger source switching circuit is connected to the CH1 and CH2 trigger signals from the vertical circuitry, the LINE trigger signal from the power supply circuitry and the external trigger signal supplied through the buffer amp including Q301 to 303.

The selected trigger signal is sent through emitter-follower Q409 and into the trigger level setting circuit composed of Q419 to 421, Q434 and IC402. The trigger level setting circuit is a Schmitt circuit, the threshold level of which is variable with the TRIG LEVEL control on the panel unit.

The signal is also supplied to the TV sync separator circuit composed of Q410 to 412 and Q416 to 418 through C403. Q410, D406 and 407 form the polarity inverter, Q416 is the sync tip clamper and Q418 is the switch for separating the vertical sync signal. IC403a is used to select between the ordinary sync signal or TV sync signal and activate the sweep gate flip-flop IC401b.

Sweep circuit

The gate signal from IC401b turns Q427 ON-OFF in the AUTO or NORM mode to control the ramp wave generator circuit composed of IC407 to 410 and Q432 and 433. This is a constant-current charge type ramp circuit and the time constant is determined by combining R469 to 472, R474 to 477, C304 and 305 according to the code entered from the sweep time switch on the panel. In case the code indicates a value below 1 ms/div., the time constant adjustment circuit of Q305 is activated so VR301 and R310 are involved in the determination of the time constant.

In the X-Y mode, the ramp wave is not generated because the sweep gate is stopped by IC405d.

Q428 to 430 and IC205c and d determine the upper limit and hold-off time of the ramp wave.

The ramp wave becomes the sweep signal, which is sent through the buffer amp of Q307 and 308, input to the sweep signal-X signal switching circuit formed by Q309 to 312, selected and applied to the horizontal final amp in the final unit.

Horizontal final amplifier

The horizontal signal is input to Q215. The voltage corresponding to the horizontal position is input to Q202, then into the feedback amp with constant current load that is composed of Q205 to 212, and amplified to an amplitude large enough to drive the CRT.

Q203 and 204 are turned ON in the MAG mode to increase the gain to 10x the normal gain.

CS-4125/CS-4135 CIRCUIT DESCRIPTION

CHOP oscillator

The CHOP oscillator circuit is composed of IC406c and d. IC403b selects the CHOP oscillator signal in the CHOP mode or sweep gate signal in the ALT mode, and the selected signal is used as the signal for switching channels.
IC406a and b inputs the signal from the CHOP oscillator and the opposite-phase signal of the sweep gate into the blanking amp in the final unit as the blanking signals.

High-voltage and blanking circuitry

Q401 oscillates by using the inductance of converter transformer T1. The oscillated voltage appears on the high-voltage coil and -1800 V [CS-4135 : -1500 V] is obtained from it by means of the voltage multiplying rectifier composed of C404, C405, D402 and D403 [CS-4135 : C405 and D403] and control circuit composed of Q402 to 404. A CRT heater coil is also provided which lights the CRT heater through R401. A401 is the Cockcroft circuit generating the high 10.5 kV voltage for the CRT anode. [A401 is not used with the CS-4125]
From the middle of the high-voltage coil, a voltage of about 300 Vp-p is extracted and modulated with the blanking signal. The blanking signal sent from the ATT unit passes through the blanking amp composed of Q409 to 411 and, together with the modulation signal, enters the DC regenerator circuit composed of D404 to 407, C411 and C412 to supply the intensity control signal to the G1 electrode of the CRT.
Q405 to 408 are used in focusing control, and a high withstanding voltage is obtained by connecting 4 transistors in series. [CS-4135 : 3 transistors in series]

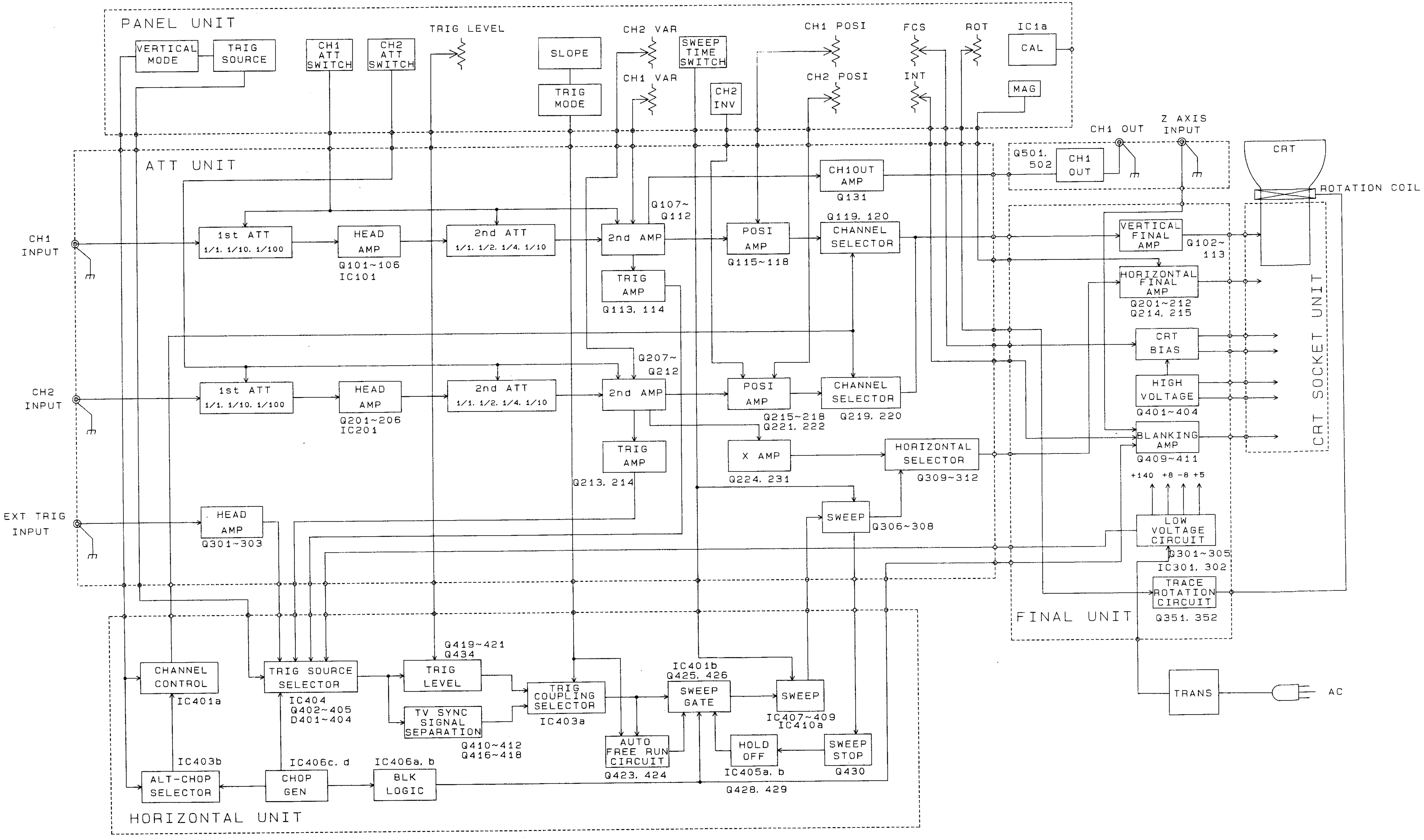
Low-voltage circuit

IC301 and 302 are used to control 4 voltage systems of +/-8 V, +5 V [CS-4135 : 80 V] and +140 V based on -8 V. The +5 V is controlled by 3-Terminal regulator IC303 [not used with the CS-4125]. The +/-10 V voltages are unstable voltages used as the power supply for the high-voltage circuitry.

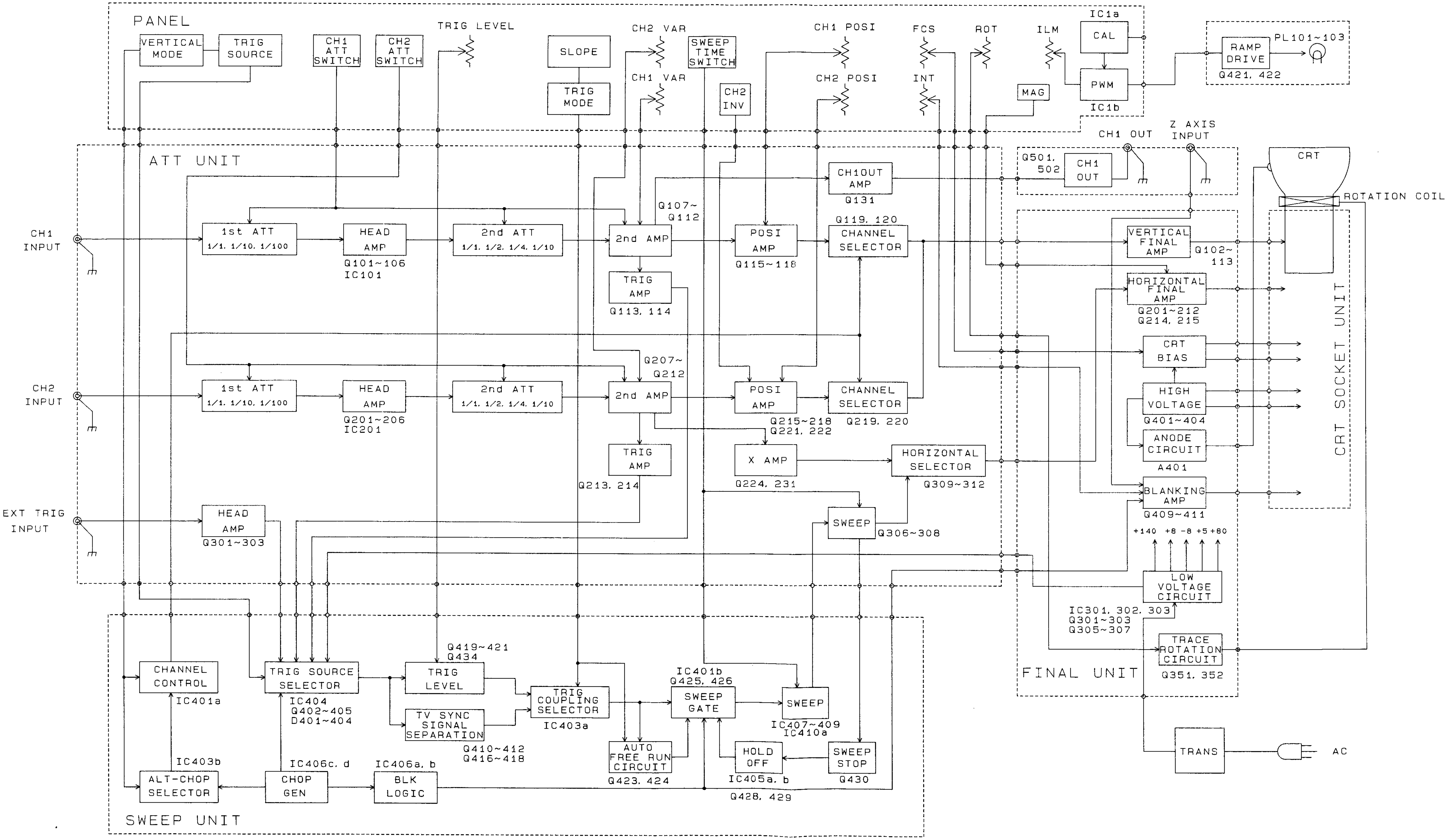
Other

Q351 and 352 in the final unit are used to drive the rotation coil. IC1 in the panel unit is the CAL signal oscillator circuit which generates a square wave of 1 Vp-p and about 1 kHz.
Q421 and Q422 are illumination lamp driver transistors. The control signal is the pulse-width modulation signal which is set according to VR101 on the panel.

CS-4125 BLOCK DIAGRAM


PANEL UNIT
VERTICAL MODE
TRIG SOURCE
CH1 ATT SWITCH
CH2 ATT SWITCH
TRIG LEVEL
SLOPE
TRIG MODE
CH2 VAR
CH1 VAR
SWEEP TIME SWITCH
CH2 INV
CH1 POSI
CH2 POSI
FCS
INT
ROT
IC1a
CAL
MAG
ATT UNIT
CH1 INPUT
CH2 INPUT
EXT TRIG INPUT
1st ATT
1/1, 1/10, 1/100
HEAD AMP
Q101~106
IC101
2nd ATT
1/1, 1/2, 1/4, 1/10
Q107~Q112
2nd AMP
TRIG AMP
Q113, 114
CH1OUT AMP
Q131
POSI AMP
Q115~118
Q119, 120
CHANNEL SELECTOR
Q201~206
IC201
Q207~Q212
Q213, 214
Q215~218
Q221, 222
Q219, 220
X AMP
Q224, 231
HORIZONTAL SELECTOR
Q309~312
SWEEP
Q306~308
Q301~303
CH1 OUT
Z AXIS INPUT
Q501, 502
CH1 OUT
CRT
ROTATION COIL
VERTICAL FINAL AMP
Q102~113
HORIZONTAL FINAL AMP
Q201~212
Q214, 215
CRT BIAS
HIGH VOLTAGE
Q401~404
BLANKING AMP
Q409~411
+140 +8 -8 +5
LOW VOLTAGE CIRCUIT
Q301~305
IC301, 302
TRACE ROTATION CIRCUIT
Q351, 352
FINAL UNIT
CRT SOCKET UNIT
TRANS
AC
HORIZONTAL UNIT
CHANNEL CONTROL
IC401a
TRIG SOURCE SELECTOR
IC404
Q402~405
D401~404
Q419~421
Q434
TRIG LEVEL
TV SYNC SIGNAL SEPARATION
Q410~412
Q416~418
TRIG COUPLING SELECTOR
IC403a
IC401b
Q425, 426
SWEEP GATE
SWEEP
IC407~409
IC410a
AUTO FREE RUN CIRCUIT
Q423, 424
HOLD OFF
IC405a, b
Q428, 429
SWEEP STOP
Q430
IC403b
ALT-CHOP SELECTOR
IC406c, d
CHOP GEN
IC406a, b
BLK LOGIC

CS-4135 BLOCK DIAGRAM


PANEL
VERTICAL MODE
TRIG SOURCE
CH1 ATT SWITCH
CH2 ATT SWITCH
TRIG LEVEL
SLOPE
TRIG MODE
CH2 VAR
CH1 VAR
SWEEP TIME SWITCH
CH2 INV
CH1 POSI
CH2 POSI
FCS
INT
ROT
ILM
MAG
IC1a
CAL
PWM
IC1b
RAMP DRIVE
Q421, 422
PL101~103
ATT UNIT
CH1 INPUT
1st ATT 1/1, 1/10, 1/100
HEAD AMP
Q101~106
IC101
2nd ATT 1/1, 1/2, 1/4, 1/10
2nd AMP
Q107~Q112
TRIG AMP
Q113, 114
POSI AMP
Q115~118
CH1OUT AMP
Q131
CHANNEL SELECTOR
Q119, 120
CH1 OUT
Q501, 502
CH1 OUT
Z AXIS INPUT
CRT
ROTATION COIL
VERTICAL FINAL AMP
Q102~113
HORIZONTAL FINAL AMP
Q201~212
Q214, 215
CRT BIAS
HIGH VOLTAGE
Q401~404
ANODE CIRCUIT
A401
BLANKING AMP
Q409~411
CRT SOCKET UNIT
CH2 INPUT
1st ATT 1/1, 1/10, 1/100
HEAD AMP
Q201~206
IC201
2nd ATT 1/1, 1/2, 1/4, 1/10
2nd AMP
Q207~Q212
TRIG AMP
Q213, 214
POSI AMP
Q215~218
Q221, 222
CHANNEL SELECTOR
Q219, 220
X AMP
Q224, 231
HORIZONTAL SELECTOR
Q309~312
SWEEP
Q306~308
EXT TRIG INPUT
HEAD AMP
Q301~303
+140 +8 -8 +5 +80
LOW VOLTAGE CIRCUIT
IC301, 302, 303
Q301~303
Q305~307
TRACE ROTATION CIRCUIT
Q351, 352
FINAL UNIT
TRANS
AC
CHANNEL CONTROL
IC401a
TRIG SOURCE SELECTOR
IC404
Q402~405
D401~404
TRIG LEVEL
Q419~421
Q434
TV SYNC SIGNAL SEPARATION
Q410~412
Q416~418
TRIG COUPLING SELECTOR
IC403a
AUTO FREE RUN CIRCUIT
Q423, 424
SWEEP GATE
IC401b
Q425, 426
SWEEP
IC407~409
IC410a
HOLD OFF
IC405a, b
Q428, 429
SWEEP STOP
Q430
ALT-CHOP SELECTOR
IC403b
CHOP GEN
IC406c, d
BLK LOGIC
IC406a, b
SWEEP UNIT

CS-4125 (~S/NO.7121000) ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.
The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer. For optimum adjustment, turn the power on and warm up the scope sufficiently (more than 30 minutes) before starting.
Before calibrating the scope, check the power supply voltage.

TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

Test Equipment	Model	Minimum Specification
Digital Multi-Meter	DL-712 (KENWOOD)	Impedance: More than 10 MΩ, Measuring range: 0.2 V to 1000 V
Sine-Wave Generator	651 B (YHP)	Frequency: 10 Hz to 10 MHz, constant voltage over tuning range
Sine-Wave Generator	SG-503 (Tektronix)	Frequency: 50 kHz to 100 MHz, Output impedance: 50 Ω, constant voltage over tuning range
Square-Wave Generator	PG-506 (Tektronix)	Output signal: 1 kHz, Amplitude: 10 mVp-p to 10 Vp-p, Accuracy: within ±1%, Rise time: 35ns or less 100 kHz, Rise time: 1 ns or less
Q Meter	4343B (YHP)	–
Color Pattern Generator	CG-921 (KENWOOD)	–
Oscilloscope	CS-6040 (KENWOOD)	Sensitivity: more than 1 mV Frequency response: More than 150 MHz
Time-Marker Generator	TG-501 (Tektronix)	Time mark: 0.5 s to 0.1μs repetive waveform
High-Voltage Probe	–	Input Impedance: 1000 MΩ
Termination	–	Impedance: 50 Ω Accuracy: within 3%
Termination	–	3 watts type impedance: 50 Ω
Attenuator	–	–20 dB attenuation (50 Ω)

Table 1

PREPARATION FOR ADJUSTMENT

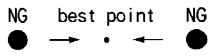
Control Settings

The control settings listed below must be used for each adjustment procedure.
Exceptions to these settings will be noted as they occur.
After completing a adjustment, return the controls to the following settings.

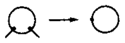
NEME OF KNOBS	POSITION
INTEN	12 o'clock
FOCUS	12 o'clock
◄ ► POSITION	12 o'clock
× 10 MAG	OFF
VARIABLE	CAL
VERTICAL MODE	CH 1
INV	OFF
X - Y	OFF
TRIGGERING SOURCE	VERT MODE
TRIGGERING MODE	AUTO
TRIGGERING LEVEL	12 o'clock
VOLTS / DIV (CH1 and CH2)	5 V / DIV
SWEEP TIME / DIV	0.5 s / 50 ms
VOLTS / DIV LEVER	AC
SLOPE	▮ +

Table 2

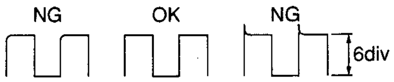
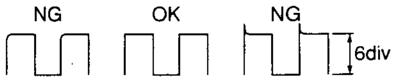
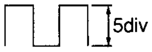
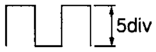
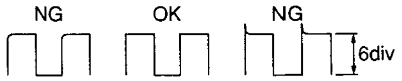
CS-4125 (~S/NO.7121000) ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
Supply voltage	VR301	X73-2090	-8.0 V Adjustment range: -7.96 to -8.04 V (±0.5 %) Apply the digital multimeter probe to VR301 and adjust to the adjustment range.
Vertical operating voltage	VR102	X73-2090	V.MODE: CH1 VOLTS: 10 mV (both CH) AC-DC: GND (both CH) H.MODE: AUTO VARIABLE: CAL (both CH) 1) Move the luminescent line to the CRT center by operating the POSI controls. 2) Plug the dedicated connector into CN503. 3) Adjust so that the multimeter is 60.0 V. (Adjustment range: 59.9 to 60.1 V) 4) After adjustment, unplug the connector. * In case the dedicated connector is not available, adjust so that the center value of the + and - electrodes is 60.0 V. (Example) When the + electrode (adjustment) is 60.0 V and the - electrode (check) is 62.0 V; the + electrode (adjustment) should be 59.0 V and the - electrode (check) should be 61.0 V.
Horizontal operating voltage	VR203	X73-2090	V.MODE: CH1 VOLTS: 10 mV (both CH) AC-DC: GND (both CH) X-Y: ON VARIABLE: CAL (both CH) 1) Move the luminescent line to the CRT center by operating the POSI controls. 2) Plug the dedicated connector into CN503. 3) Adjust so that the multimeter is 70.0 V. (Adjustment range: 69.5 to 70.5 V) 4) After adjustment, unplug the connector. * In case the dedicated connector is not available, adjust so that the center value of the + and - electrodes is 70.0 V. (Example) When the + electrode (adjustment) is 70.0 V and the - electrode (check) is 73.0 V; the + electrode (adjustment) should be 68.5 V and the - electrode (check) should be 71.5 V.
Focus center and ASTIG	VR401 (Focus) VR403 (ASTIG)	X73-2090	V.MODE: CH1 H.MODE: X-Y AC-DC: GND (both CH) FOCUS: 12 o'clock VARIABLE: CAL (both CH) INTEN: Arbitrary VOLTS: 10 mV (both CH) 1) Set FOCUS on the panel to the 12 o'clock position. Adjust VR401 and VR403 to move the spot to the best point. 

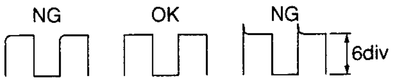
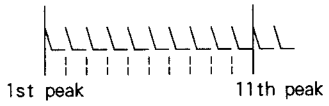
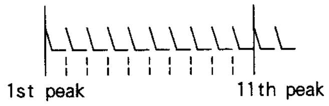
CS-4125 (~S/NO.7121000) ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
INTENSITY	VR402	X73-2090	V.MODE: CH1 VOLTS: 10 mV (both CH) AC-DC: GND (both CH) H.MODE: X-Y VARIABLE: CAL (both CH) 1) Set INTEN to the 9 o'clock position. 2) At the 9 o'clock position, adjust so that the spot disappears. 3) Set INTEN to the fully counterclockwise position then rotate it clockwise until the fully clockwise position and check that the luminous intensity increases uniformly. INTEN control position  From the positions indicated above, set to the 9:00 position. * In the following adjustments, the INTEN control can be set in any arbitrary position.
CH1 STEP ATT Balance	VR101	X75-1220	V.MODE: CH1 VOLTS: 5 mV (both CH) AC-DC: GND (both CH) H.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust so that the luminescent line does not move when VOLTS is switched from 5 mV to 1 mV. * Adjust after switching to 1 mV with reference to the 5 mV position.
CH1 VARIABLE Balance	VR102	X75-1220	V.MODE: CH1 VOLTS: 1 mV (both CH) AC-DC: GND (both CH) H.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust by setting VARIABLE to the MIN (fully counterclockwise) position with reference to the MAX (CAL) position. * Ensure that the luminescent line does not move when VARIABLE is switched between MIN ↔ MAX.
CH2 STEP ATT Balance	VR201	X75-1220	V.MODE: CH2 VOLTS: 5 mV (both CH) AC-DC: GND (both CH) H.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust so that the luminescent line does not move when VOLTS is switched from 5 mV to 1 mV. * Adjust after switching to 1 mV with reference to the 5 mV position.
CH2 VARIABLE Balance	VR202	X75-1220	V.MODE: CH2 VOLTS: 1 mV (both CH) AC-DC: GND (both CH) H.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust by setting VARIABLE to the MIN (fully counterclockwise) position with reference to the MAX (CAL) position. * Ensure that the luminescent line does not move when VARIABLE is switched between MIN ↔ MAX.
ADD POSITION	VR103	X73-2090	V.MODE: ALT or CHOP VOLTS: 5 mV (both CH) AC-DC: GND (both CH) H.MODE: AUTO VARIABLE: CAL (both CH) 1) Bring the luminescent line to the center for both CH1 and CH2. 2) Switch V-MODE to ADD and adjust VR101 so that the luminescent line comes to the center.

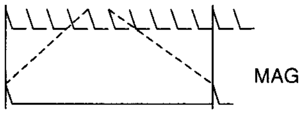
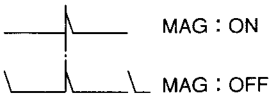
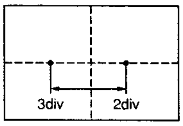
CS-4125 (~S/NO.7121000) ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
CH1 100 Hz square wave	VR104	X75-1220	V.MODE: CH1 VOLTS: 10 mV AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Input a 100 Hz square wave signal to CH1 and set it so that it extends by 6 divisions. 2) Adjust so that the waveform is flat. 
CH2 100 Hz square wave	VR205	X75-1220	V.MODE: CH2 VOLTS: 10 mV AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Input a 100 Hz square wave signal to CH2 and set it so that it extends by 6 divisions. 2) Adjust so that the waveform is flat. 
CH2 GAIN	VR101	X73-2090	V.MODE: CH2 VOLTS: 10 mV AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Input a 50 mV square wave signal. 2) Adjust so that the amplitude 5 divisions. 
CH1 GAIN	VR103	X75-1220	V.MODE: CH1 VOLTS: 10 mV AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Input a 50 mV square wave signal. 2) Adjust so that the amplitude 5 divisions. 
CH1 waveform shaping	TC104 (0.1 V) TC102 (1 V)	X75-1220	V.MODE: CH1 VOLTS: 10 mV (ideal waveform) AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Input a 1 kHz square wave signal to CH2 and set it so that it extends by CRT 6 divisions. (ideal waveform) 2) Adjust so that the same capacity value for ideal waveform is obtained in both waveforms at 0.1 V and 1 V. 

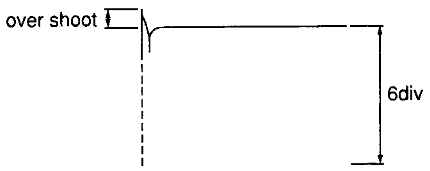
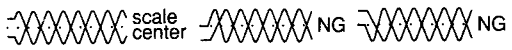
CS-4125 (~S/NO.7121000) ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
CH2 waveform shaping	TC204 (0.1 V) TC202 (1 V)	X75-1220	V.MODE: CH2 VOLTS: 10 mV (ideal waveform) AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Input a 1 kHz square wave signal to CH2 and set it so that it extends by CRT 6 divisions. (ideal waveform) 2) Adjust so that the same capacity value for ideal waveform is obtained in both waveforms at 0.1 V and 1 V. 
CH1 Input Capacity	TC103 (0.1 V) TC101 (1 V)	X75-1220	V.MODE: CH1 VOLTS: 10 mV (reference) AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Connect a capacity meter to the INPUT. 2) Measure the capacity of the 10 mV. (23 pF ± 3 pF) 3) At 0.1 V and 1 V, adjust to obtain the same values as 10 mV.
CH2 Input Capacity	TC203 (0.1 V) TC201 (1 V)	X75-1220	V.MODE: CH2 VOLTS: 10 mV (reference) AC-DC: DC H.MODE: AUTO VARIABLE: CAL 1) Connect a capacity meter to the INPUT. 2) Measure the capacity of the 10 mV. (23 pF ± 3 pF) 3) At 0.1 V and 1 V, adjust to obtain the same values as 10 mV.
SWEEP TIME 0.1 ms	VR302	X75-1220	V.MODE: CH1 VOLTS: Arbitrary SWEEP TIME: 0.1 ms AC-DC: DC VARIABLE: CAL H.MODE: AUTO 1) Input a 0.1 ms marker signal. 2) Adjust so that the marker peak and scale coincides at every divisions. 
SWEEP TIME 1 ms	VR301	X75-1220	V.MODE: CH1 VOLTS: Arbitrary SWEEP TIME: 1 ms AC-DC: DC VARIABLE: CAL H.MODE: AUTO 1) Input a 0.1 ms marker signal. 2) Adjust so that the marker peak and scale coincides at every divisions. 

CS-4125 (~S/NO.7121000) ADJUSTMENT

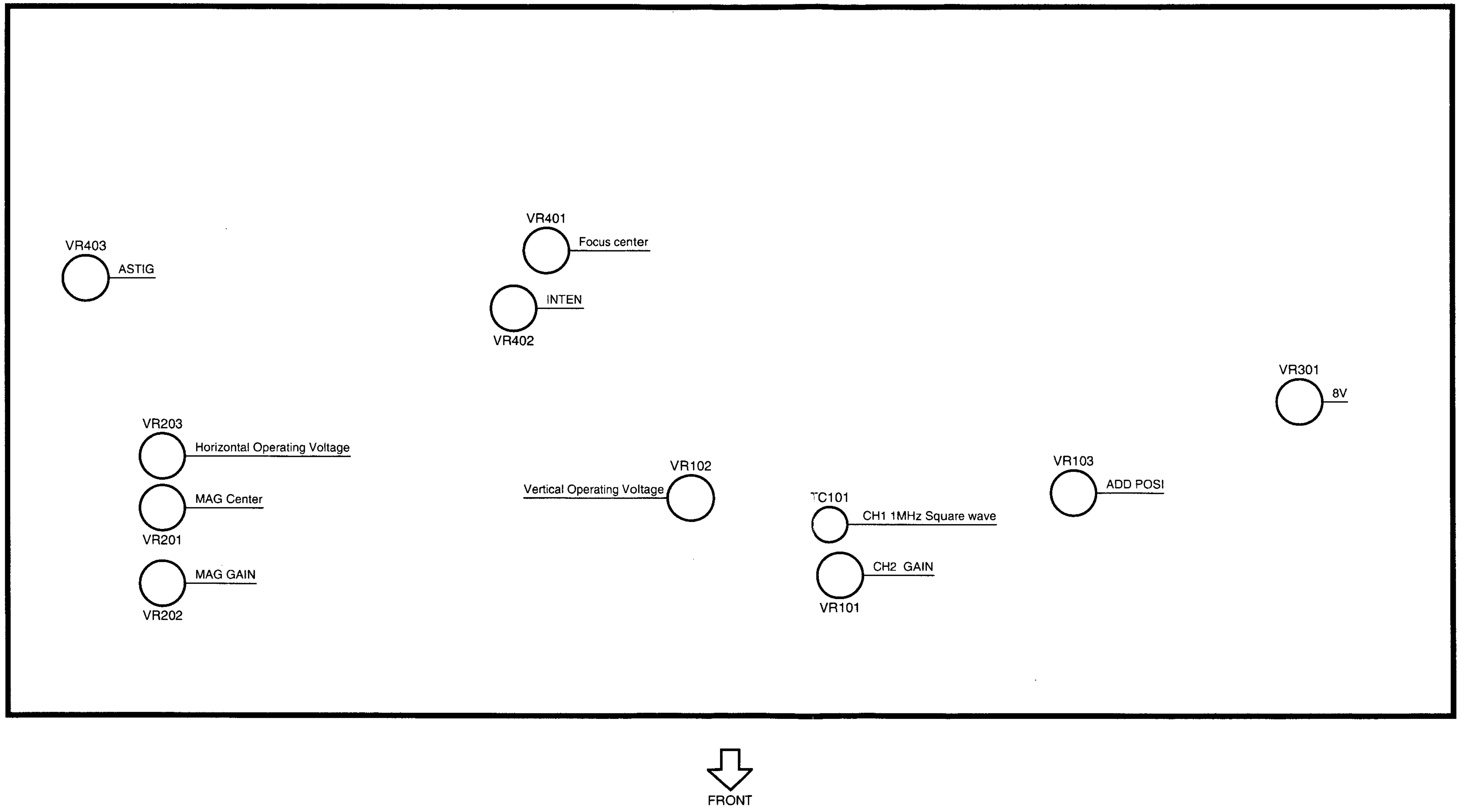
Item	Adjustment	P.C.B.	Procedure
MAG GAIN	VR202	X73-2090	V.MODE: CH1 VOLTS: Arbitrary SWEEP TIME: 0.1 ms AC-DC: DC VARIABLE: CAL H.MODE: AUTO 1) Input a 0.1 ms marker signal. 2) Adjust POSI so that the marker peak and scale coincides at every divisions. 3) Switch X10 MAG ON and adjust so that the interval between two peaks is 10 divisions. 
MAG Center	VR201	X73-2090	V.MODE: CH1 AC-DC: DC SWEEP TIME: 0.1 ms H.MODE: AUTO VARIABLE: CAL X10 MAG: ON VOLTS: Arbitrary 1) Input a 0.5 ms marker signal. 2) Adjust H.POSI so that the center peak is aligned with the scale center. 3) Switch X10 MAG OFF and adjust so that the center marker peak is aligned with the scale center. (Adjust by repeating a few times) 
X-GAIN	VR203	X75-1220	V.MODE: CH2 CH2 AC-DC: AC CH2 VOLTS: 10 mV X-Y: ON VARIABLE: CAL 1) Input a 5 mV square wave signal. 2) Adjust so that the amplitude is 5 divisions. * Make the adjustment to 5 divisions, at the CRT center. 
X-POSITION	VR204	X75-1220	X-Y: ON V.POSITION: 12 o'clock (both CH) AC-DC: GND (both CH) H.POSITION: 12 o'clock 1) Adjust the spot to the center of scale.
ALT start	VR401	X74-1660	VOLTS: 10 mV (both CH) AC-DC: DC VARIABLE: CAL V.MODE: ALT 1) Set the luminescent line of both CH to the CRT center position. 2) Input a 1 kHz sine wave to both CH and set it so that it extends by 6 divisions. (Distribute the signal using a T connector.) 3) Adjust so that the start point of both CH are aligned.

CS-4125 (~S/NO.7121000) ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
CH1 1 MHz square wave	TC101	X73-2090	V.MODE: CH1 CH1 VOLTS: 10 mV VARIABLE: CAL CH1 AC-DC: DC H.MODE: AUTO * Use a 50-ohm terminator. 1) Input a 1 MHz square wave to CH1 and set it so that it extends by 6 divisions. 2) Adjust so that the overshoot is 0.2 divisions. 
CH2 1 MHz square wave	TC205	X75-1220	V.MODE: CH2 CH2 VOLTS: 10 mV VARIABLE: CAL CH2 AC-DC: DC H.MODE: AUTO * Use a 50-ohm terminator. 1) Input a 1 MHz square wave to CH1 and set it so that it extends by 6 divisions. 2) Adjust so that the overshoot is 0.2 divisions.
FIXTRIG Center	VR303	X75-1220	V.MODE: CH1 TRIG-MODE: FIX CH1 AC-DC: DC CH1 POSITION: 12 o'clock 1) Input a 50 kHz sine wave to CH1 and set it so that it extends by 6 divisions. 2) Adjust so that the waveform starts from the waveform center line when SLOPE is switched between ±. 

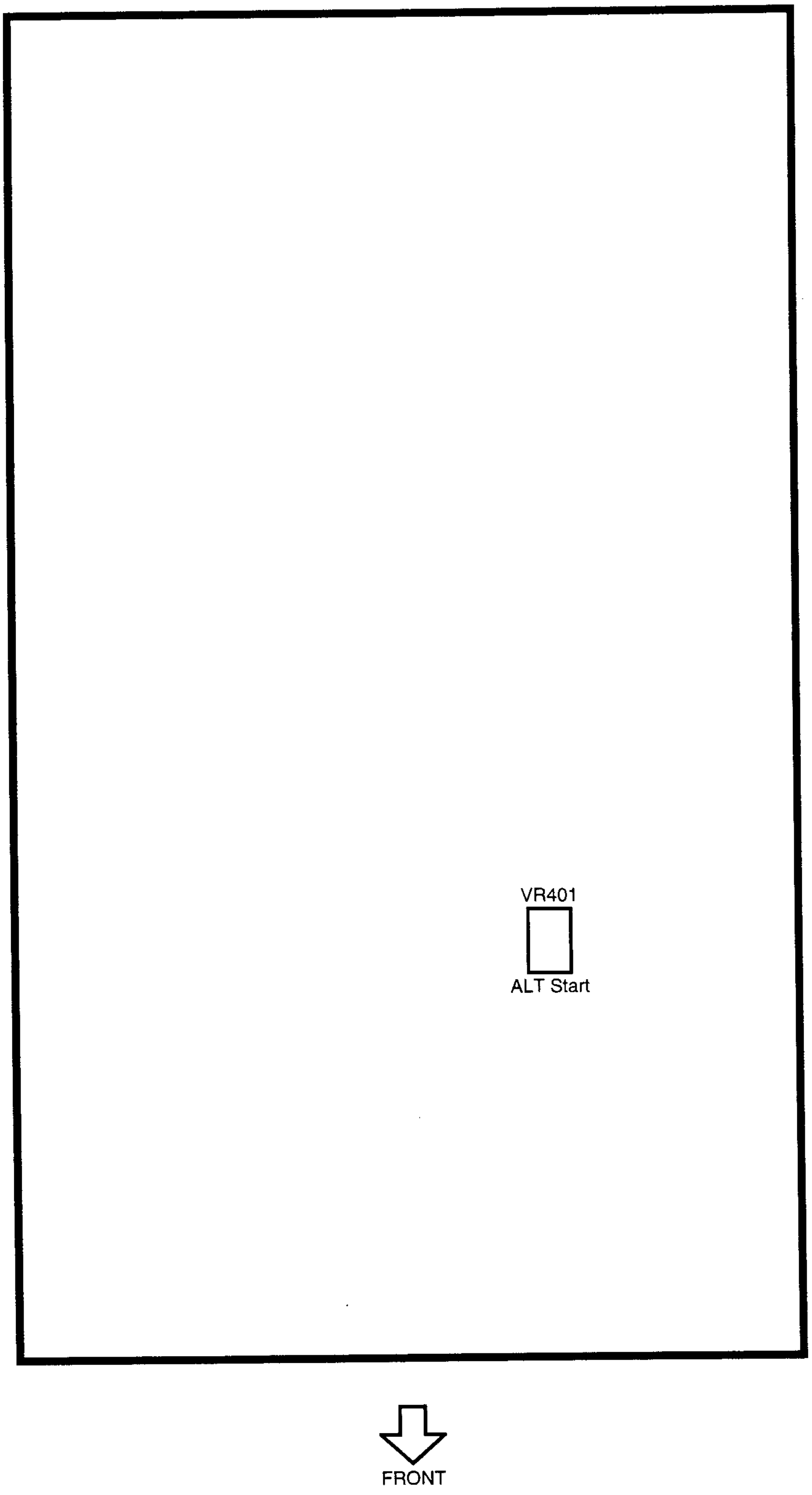
CS-4125 (~S/NO.7121000) ADJUSTMENT

FINAL UNIT (X73-2090-00)


VR403
ASTIG
VR401
Focus center
INTEN
VR402
VR301
8V
VR203
Horizontal Operating Voltage
MAG Center
VR201
MAG GAIN
VR202
VR102
Vertical Operating Voltage
TC101
CH1 1MHz Square wave
CH2 GAIN
VR101
VR103
ADD POSI
FRONT

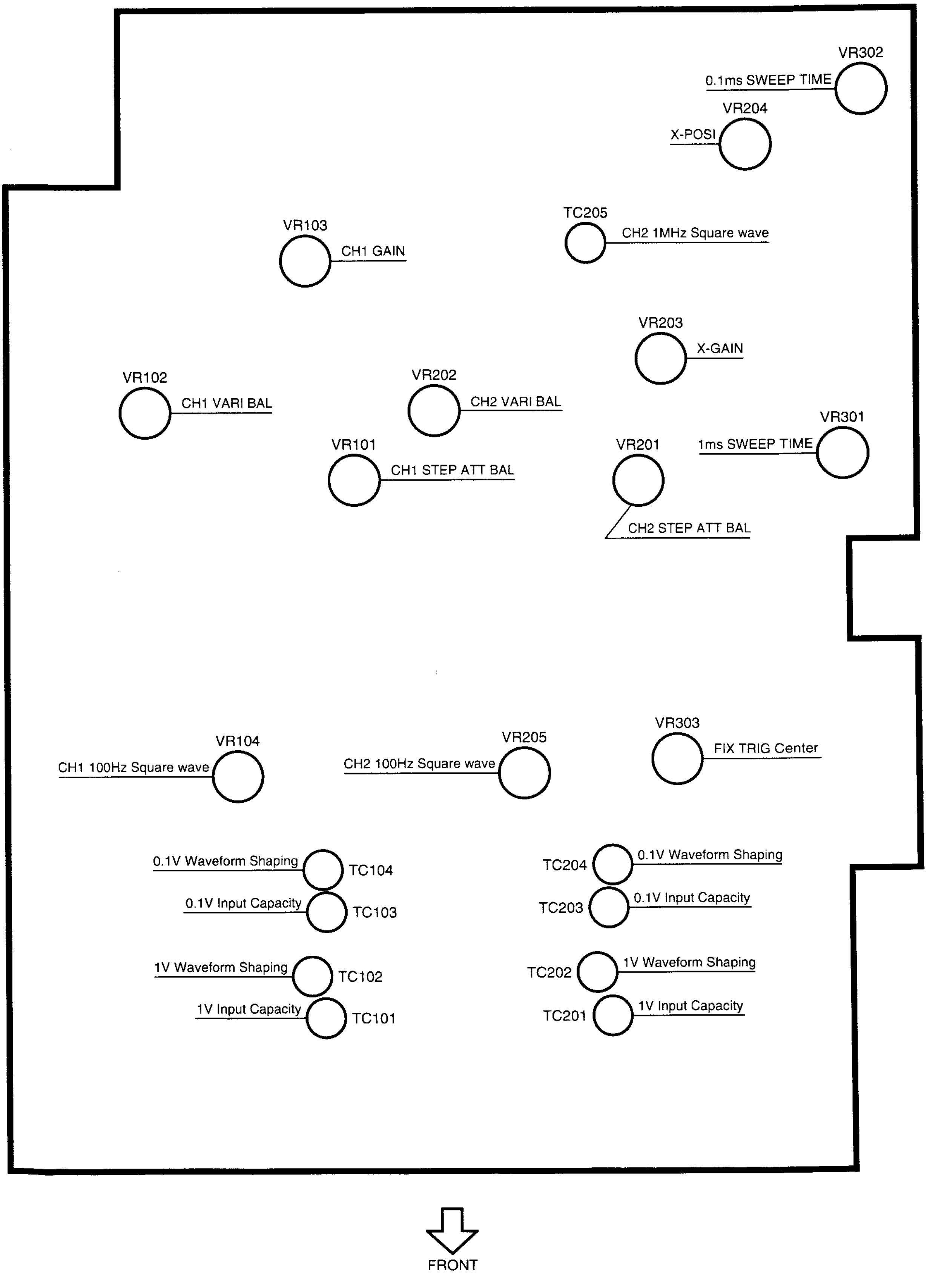
CS-4125 (~S/NO.7121000) ADJUSTMENT

SWEEP UNIT (X74-1600-00)


VR401
ALT Start
FRONT

CS-4125 (~S/NO.7121000) ADJUSTMENT

ATTENUATOR UNIT (X75-1220-00)


VR302
0.1ms SWEEP TIME
VR204
X-POSI
TC205
CH2 1MHz Square wave
VR103
CH1 GAIN
VR203
X-GAIN
VR102
CH1 VARI BAL
VR202
CH2 VARI BAL
VR301
1ms SWEEP TIME
VR101
CH1 STEP ATT BAL
VR201
CH2 STEP ATT BAL
VR104
CH1 100Hz Square wave
VR205
CH2 100Hz Square wave
VR303
FIX TRIG Center
0.1V Waveform Shaping
TC104
0.1V Input Capacity
TC103
1V Waveform Shaping
TC102
1V Input Capacity
TC101
TC204
0.1V Waveform Shaping
TC203
0.1V Input Capacity
TC202
1V Waveform Shaping
TC201
1V Input Capacity
FRONT

CS-4125/CS-4135 ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.
The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer. For optimum adjustment, turn the power on and warm up the scope sufficiently (more than 30 minutes) before starting.
Before calibrating the scope, check the power supply voltage.

TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

Test Equipment	Model	Minimum Specification
Digital Multi-Meter	DL-712 (KENWOOD)	Impedance: More than 10 MΩ, Measuring range: 0.2 V to 1000 V
Sine-Wave Generator	651 B (YHP)	Frequency: 10 Hz to 10 MHz, constant voltage over tuning range
Sine-Wave Generator	SG-503 (Tektronix)	Frequency: 50 kHz to 100 MHz, Output impedance: 50 Ω, constant voltage over tuning range
Square-Wave Generator	PG-506 (Tektronix)	Output signal: 1 kHz, Amplitude: 10 mVp-p to 10 Vp-p, Accuracy: within ± 1%, Rise time: 35ns or less 100 kHz, Rise time: 1 ns or less
Q Meter	4343B (YHP)	–
Color Pattern Generator	CG-921 (KENWOOD)	–
Oscilloscope	CS-6040 (KENWOOD)	Sensitivity: more than 1 mV Frequency response: More than 150 MHz
Time-Marker Generator	TG-501 (Tektronix)	Time mark: 0.5 s to 0.1μs repetive waveform
High-Voltage Probe	–	Input Impedance: 1000 MΩ
Termination	–	Impedance: 50 Ω Accuracy: within 3%
Termination	–	3 watts type impedance: 50 Ω
Attenuator	–	– 20 dB attenuation (50 Ω)

Table 1

PREPARATION FOR ADJUSTMENT

Control Settings

The control settings listed below must be used for each adjustment procedure.
Exceptions to these settings will be noted as they occur.
After completing a adjustment, return the controls to the following settings.

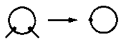
NEME OF KNOBS	POSITION
INTEN	12 o'clock
FOCUS	12 o'clock
SCALE ILLUM	12 o'clock
◄ ► POSITION	12 o'clock
× 10 MAG	OFF
VARIABLE	CAL
VERTICAL MODE	CH 1
INV	OFF
X - Y	OFF
TRIGGERING SOURCE	VERT MODE
TRIGGERING MODE	AUTO
TRIGGERING LEVEL	12 o'clock
VOLTS / DIV (CH1 and CH2)	5 V / DIV
SWEEP TIME / DIV	0.5 s / 50 ms
VOLTS / DIV LEVER	AC
SLOPE	■ +

Table 2

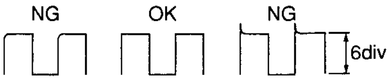
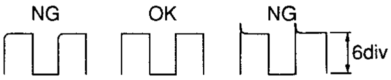
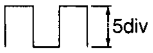
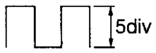
CS-4125/CS-4135 ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
Supply voltage	VR301	X73-2150	-8.0 V Adjustment range: -7.96 to -8.04 V (±0.5 %) Apply the digital multimeter probe to VR301 and adjust to the adjustment range.
Vertical operating voltage	VR102	X73-2150	V.MODE: CH1 VOLTS: 10 mV (both CH) AC-DC: GND (both CH) TRIG.MODE: AUTO VARIABLE: CAL (both CH) 1) Move the luminescent line to the CRT center by operating the POSI controls. 2) Plug the dedicated connector into CN503. 3) CS-4125: Adjust so that the multimeter is 60.0 V. (Adjustment range:59.9 to 60.1 V) CS-4135: Adjust so that the multimeter is 40.0 V. (Adjustment range:39.9 to 40.1 V) 4) After adjustment, unplug the connector. * In case the dedicated connector is not available, adjust so that the center value of the + and - electrodes is 60.0 V. (Example) When the + electrode (adjustment) is 60.0 V and the - electrode (check) is 62.0 V; the + electrode (adjustment) should be 59.0 V and the - electrode (check) should be 61.0 V.
Horizontal operating voltage	VR203	X73-2150	V.MODE: CH1 VOLTS: 10 mV (both CH) AC-DC: GND (both CH) X-Y: ON VARIABLE: CAL (both CH) 1) Move the luminescent line to the CRT center by operating the POSI controls. 2) Plug the dedicated connector into CN503. 3) Adjust so that the multimeter is 70.0 V. (Adjustment range: 69.5 to 70.5 V) 4) After adjustment, unplug the connector. * In case the dedicated connector is not available, adjust so that the center value of the + and - electrodes is 70.0 V. (Example) When the + electrode (adjustment) is 70.0 V and the - electrode (check) is 73.0 V; the + electrode (adjustment) should be 68.5 V and the - electrode (check) should be 71.5 V.
Focus center and ASTIG	VR401 (Focus) VR403 (ASTIG)	X73-2150	V.MODE: CH1 H.MODE: X-Y AC-DC: GND (both CH) FOCUS: 12 o'clock VARIABLE: CAL (both CH) INTEN: Arbitrary VOLTS: 10 mV (both CH) 1) Set FOCUS on the panel to the 12 o'clock position. Adjust VR401 and VR403 to move the spot to the best point. NG best point NG ● → • ← ●

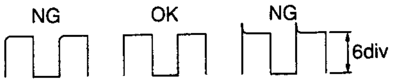
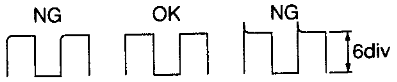
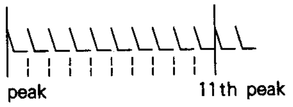
CS-4125/CS-4135 ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
INTENSITY	VR402	X73-2150	V.MODE: CH1 VOLTS: 10 mV (both CH) AC-DC: GND (both CH) X-Y: ON VARIABLE: CAL (both CH) 1) Set INTEN to the 9 o'clock position. 2) At the 9 o'clock position, adjust so that the spot disappears. 3) Set INTEN to the fully counterclockwise position then rotate it clockwise until the fully clockwise position and check that the luminous intensity increases uniformly. INTEN control position  From the positions indicated above, set to the 9:00 position. * In the following adjustments, the INTEN control can be set in any arbitrary position.
CH1 STEP ATT Balance	VR101	X75-1250	V.MODE: CH1 VOLTS: 5 mV (both CH) AC-DC: GND (both CH) TRIG.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust so that the luminescent line does not move when VOLTS is switched from 5 mV to 1 mV. * Adjust after switching to 1 mV with reference to the 5 mV position.
CH1 VARIABLE Balance	VR102	X75-1250	V.MODE: CH1 VOLTS: 1 mV (both CH) AC-DC: GND (both CH) TRIG.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust by setting VARIABLE to the MIN (fully counterclockwise) position with reference to the MAX (CAL) position. * Ensure that the luminescent line does not move when VARIABLE is switched between MIN ↔ MAX.
CH2 STEP ATT Balance	VR201	X75-1250	V.MODE: CH2 VOLTS: 5 mV (both CH) AC-DC: GND (both CH) TRIG.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust so that the luminescent line does not move when VOLTS is switched from 5 mV to 1 mV. * Adjust after switching to 1 mV with reference to the 5 mV position.
CH2 VARIABLE Balance	VR202	X75-1250	V.MODE: CH2 VOLTS: 1 mV (both CH) AC-DC: GND (both CH) TRIG.MODE: AUTO VARIABLE: CAL (both CH) 1) Adjust by setting VARIABLE to the MIN (fully counterclockwise) position with reference to the MAX (CAL) position. * Ensure that the luminescent line does not move when VARIABLE is switched between MIN ↔ MAX.
ADD POSITION	VR103	X73-2150	V.MODE: ALT or CHOP VOLTS: 5 mV (both CH) AC-DC: GND (both CH) TRIG.MODE: AUTO VARIABLE: CAL (both CH) 1) Bring the luminescent line to the center for both CH1 and CH2. 2) Switch V-MODE to ADD and adjust VR101 so that the luminescent line comes to the center.

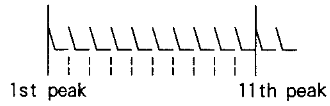
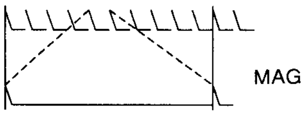
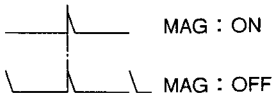
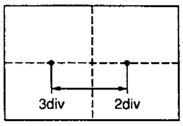
CS-4125/CS-4135 ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
CH1 100 Hz square wave	VR104	X75-1250	V.MODE: CH1 VOLTS: 10 mV AC-DC: DC TRIG.MODE: AUTO VARIABLE: CAL 1) Input a 100 Hz square wave signal to CH1 and set it so that it extends by 6 divisions. 2) Adjust so that the waveform is flat. 
CH2 100 Hz square wave	VR204	X75-1250	V.MODE: CH2 VOLTS: 10 mV AC-DC: DC TRIG.MODE: AUTO VARIABLE: CAL 1) Input a 100 Hz square wave signal to CH2 and set it so that it extends by 6 divisions. 2) Adjust so that the waveform is flat. 
CH2 10 mV range V.GAIN	VR101	X73-1250	V.MODE: CH2 VOLTS: 10 mV AC-DC: DC TRIG.MODE: AUTO VARIABLE: CAL 1) Input a 50 mV square wave signal. 2) Adjust so that the amplitude 5 divisions. 
CH1 10 mV range V.GAIN	VR103	X75-1250	V.MODE: CH1 VOLTS: 10 mV AC-DC: DC TRIG.MODE: AUTO VARIABLE: CAL 1) Input a 50 mV square wave signal. 2) Adjust so that the amplitude 5 divisions. 
CH1 1mV range V.GAIN	VR105	X75-1250	V.MODE: CH1 VOLTS: 10 mV AC-DC: DC TRIG.MODE: AUTO VARIABLE: CAL 1) Input a 5 mV square wave signal. 2) Adjust so that the amplitude 5 divisions.
CH2 1mV range V.GAIN	VR206	X75-1250	V.MODE: CH2 VOLTS: 10 mV AC-DC: DC TRIG.MODE: AUTO VARIABLE: CAL 1) Input a 50 mV square wave signal. 2) Adjust so that the amplitude 5 divisions.

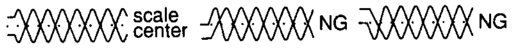
CS-4125/CS-4135 ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
CH1 waveform shaping	TC104 (0.1 V) TC102 (1 V)	X75-1250	MODE: CH1 AC-DC: DC VARIABLE: CAL VOLTS: 10 mV (ideal waveform) TRIG.MODE: AUTO 1) Input a 1 kHz square wave signal to CH2 and set it so that it extends by CRT 6 divisions. (ideal waveform) 2) Adjust so that the same capacity value for ideal waveform is obtained in both waveforms at 0.1 V and 1 V. 
CH2 waveform shaping	TC204 (0.1 V) TC202 (1 V)	X75-1250	V.MODE: CH2 AC-DC: DC VARIABLE: CAL VOLTS: 10 mV (ideal waveform) TRIG.MODE: AUTO 1) Input a 1 kHz square wave signal to CH2 and set it so that it extends by CRT 6 divisions. (ideal waveform) 2) Adjust so that the same capacity value for ideal waveform is obtained in both waveforms at 0.1 V and 1 V. 
CH1 Input Capacity	TC103 (0.1 V) TC101 (1 V)	X75-1250	V.MODE: CH1 AC-DC: DC VARIABLE: CAL VOLTS: 10 mV (reference) TRIG.MODE: AUTO 1) Connect a capacity meter to the CH1 INPUT. 2) Measure the capacity of the 10 mV. (23 pF ± 3 pF) 3) At 0.1 V and 1 V, adjust to obtain the same values as 10 mV.
CH2 Input Capacity	TC203 (0.1 V) TC201 (1 V)	X75-1250	V.MODE: CH2 AC-DC: DC VARIABLE: CAL VOLTS: 10 mV (reference) TRIG.MODE: AUTO 1) Connect a capacity meter to the CH2 INPUT. 2) Measure the capacity of the 10 mV. (23 pF ± 3 pF) 3) At 0.1 V and 1 V, adjust to obtain the same values as 10 mV.
SWEEP TIME 0.1 ms	VR302	X75-1250	V.MODE: CH1 SWEEP TIME: 0.1 ms VARIABLE: CAL VOLTS: Arbitrary AC-DC: DC TRIG.MODE: AUTO 1) Input a 0.1 ms marker signal. 2) Adjust so that the marker peak and scale coincides at every divisions. 

CS-4125/CS-4135 ADJUSTMENT

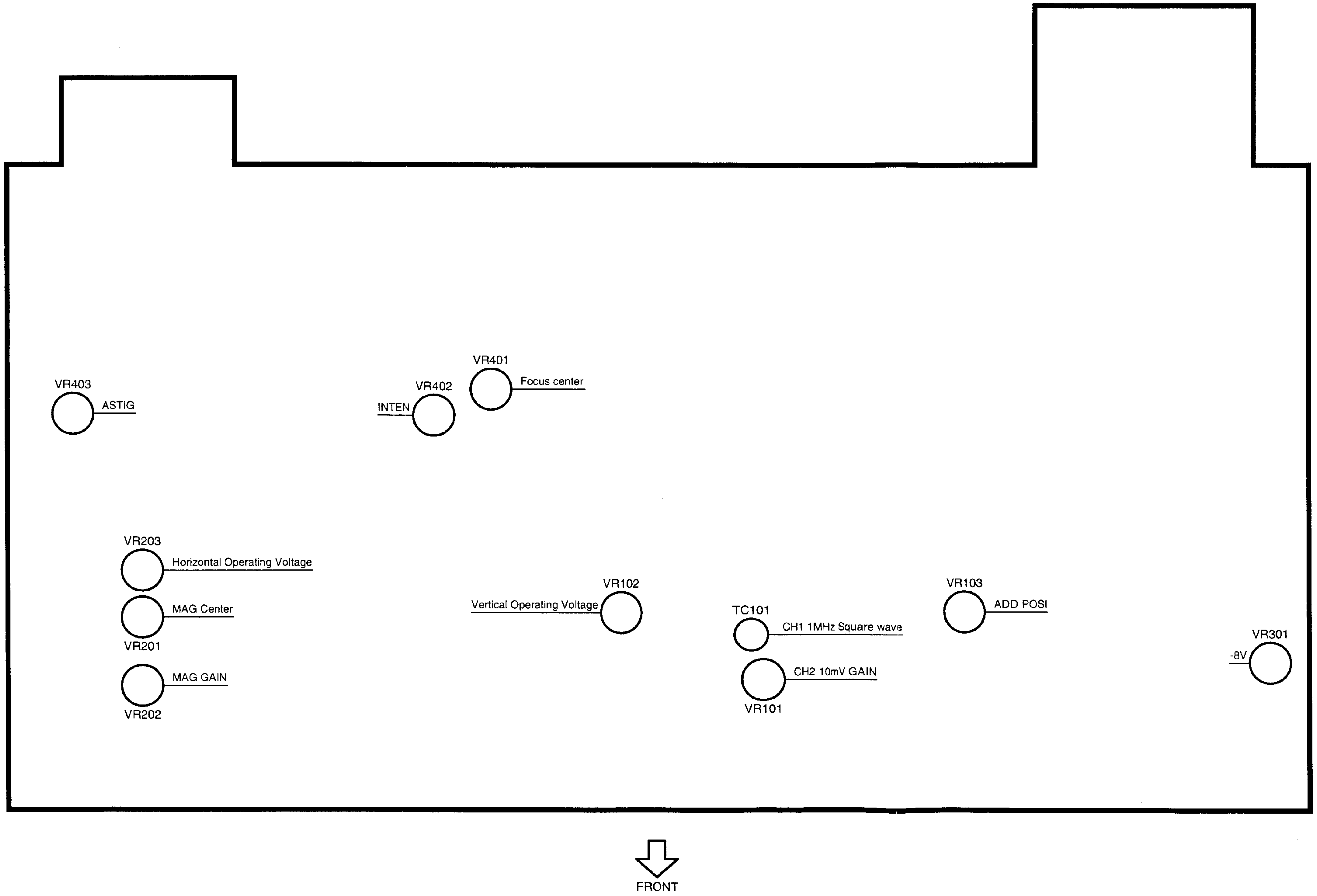
Item	Adjustment	P.C.B.	Procedure
SWEEP TIME 1 ms	VR301	X75-1250	V.MODE: CH1 VOLTS: Arbitrary SWEEP TIME: 1 ms AC-DC: DC VARIABLE: CAL TRIG.MODE: AUTO 1) Input a 0.1 ms marker signal. 2) Adjust so that the marker peak and scale coincides at every divisions. 
MAG GAIN	VR202	X73-2150	V.MODE: CH1 VOLTS: Arbitrary SWEEP TIME: 0.1 ms AC-DC: DC VARIABLE: CAL TRIG.MODE: AUTO 1) Input a 0.1 ms marker signal. 2) Adjust POSI so that the marker peak and scale coincides at every divisions. 3) Switch X10 MAG ON and adjust so that the interval between two peaks is 10 divisions. 
MAG Center	VR201	X73-2150	V.MODE: CH1 AC-DC: DC SWEEP TIME: 0.1 ms TRIG.MODE: AUTO VARIABLE: CAL X10 MAG: ON VOLTS: Arbitrary 1) Input a 0.5 ms marker signal. 2) Adjust H.POSI so that the center peak is aligned with the scale center. 3) Switch X10 MAG OFF and adjust so that the center marker peak is aligned with the scale center. (Adjust by repeating a few times) 
X-GAIN	VR203	X75-1250	V.MODE: CH2 CH2 AC-DC: AC CH2 VOLTS: 10 mV X-Y: ON VARIABLE: CAL 1) Input a 5 mV square wave signal. 2) Adjust so that the amplitude is 5 divisions. * Make the adjustment to 5 divisions, at the CRT center. 

CS-4125/CS-4135 ADJUSTMENT

Item	Adjustment	P.C.B.	Procedure
X-POSITION	VR205	X75-1250	X-Y: ON V.POSITION: 12 o'clock (both CH) AC-DC: GND (both CH) H.POSITION: 12 o'clock 1) Adjust the spot to the center of scale.
CH1 1 MHz square wave	TC101 TC105	X73-2150 X75-1250 [not used with the CS-4125]	V.MODE: CH1 CH1 AC-DC: DC CH1 VOLTS: 10 mV H.MODE: AUTO VARIABLE: CAL * Use a 50-ohm terminator. 1) Input a 1 MHz square wave to CH1 and set it so that it extends by 6 divisions. 2) CS-4125: Adjust so that the overshoot is 0.2 divisions. CS-4135: Adjust so that the overshoot is 0.3 divisions and the under side is 0.1 divisions.
CH2 1 MHz square wave	TC205	X75-1250	V.MODE: CH2 CH2 AC-DC: DC CH2 VOLTS: 10 mV TRIG.MODE: AUTO VARIABLE: CAL * Use a 50-ohm terminator. 1) Input a 1 MHz square wave to CH1 and set it so that it extends by 6 divisions. 2) CS-4125: Adjust so that the overshoot is 0.2 divisions. CS-4135: Adjust so that the overshoot is 0.3 divisions and the under side is 0.1 divisions.
ALT start	VR401	X74-1660	VOLTS: 10 mV (both CH) AC-DC: DC VARIABLE: CAL V.MODE: ALT 1) Set the luminescent line of both CH to the CRT center position. 2) Input a 1 kHz sine wave to both CH and set it so that it extends by 6 divisions. (Distribute the signal using a T connector.) 3) Adjust so that the start point of both CH are aligned.
FIX	VR303	X75-1250	V.MODE: CH1 CH1 AC-DC: DC TRIG-MODE: FIX CH1 POSITION: 12 o'clock 1) Input a 50 kHz sine wave to CH1 and set it so that it extends by 1 divisions. 2) Adjust so that the waveform starts from the waveform center line when SLOPE is switched between ±. 

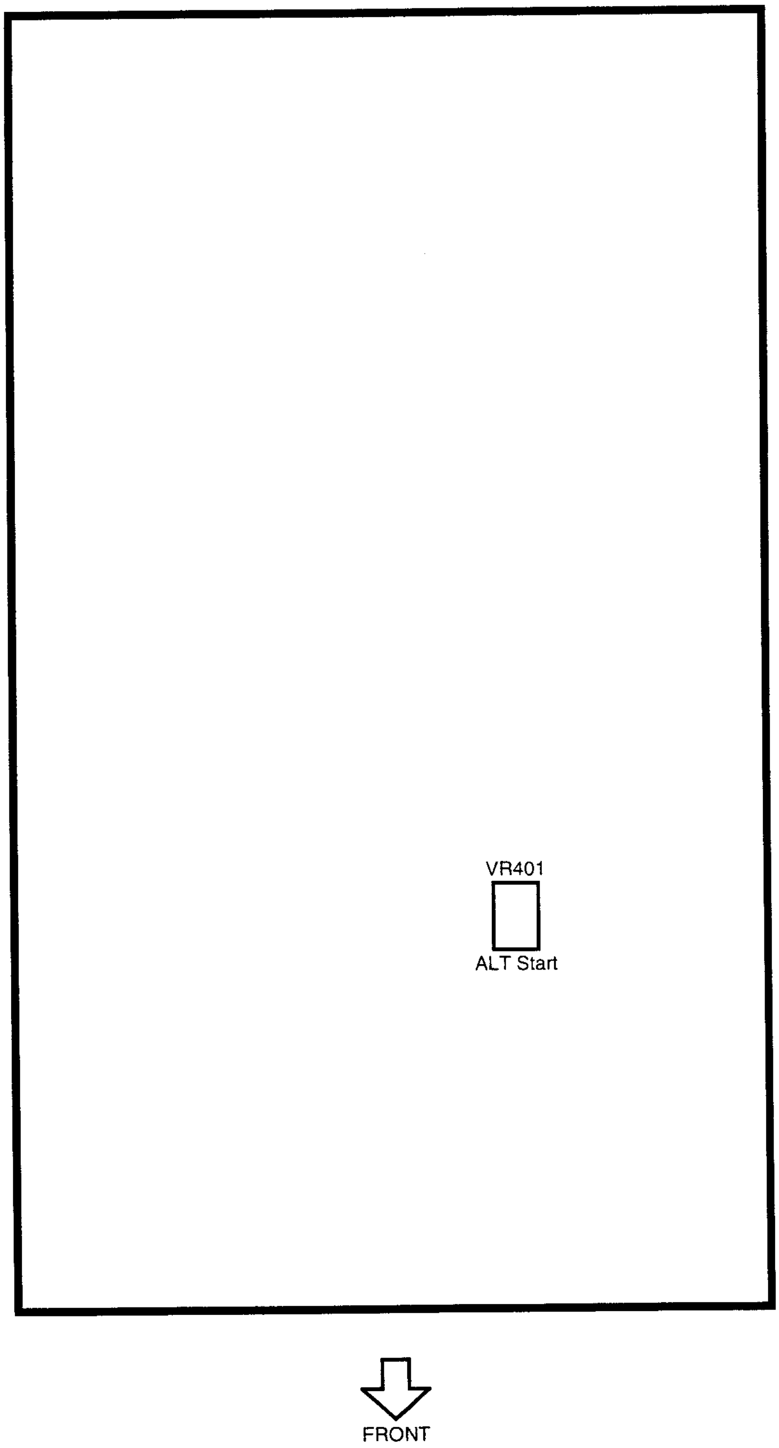
CS-4125/CS-4135 ADJUSTMENT

FINAL UNIT (X73-2150-0X)


VR403
ASTIG
VR402
INTEN
VR401
Focus center
VR203
Horizontal Operating Voltage
MAG Center
VR201
MAG GAIN
VR202
VR102
Vertical Operating Voltage
TC101
CH1 1MHz Square wave
CH2 10mV GAIN
VR101
VR103
ADD POSI
VR301
-8V
FRONT

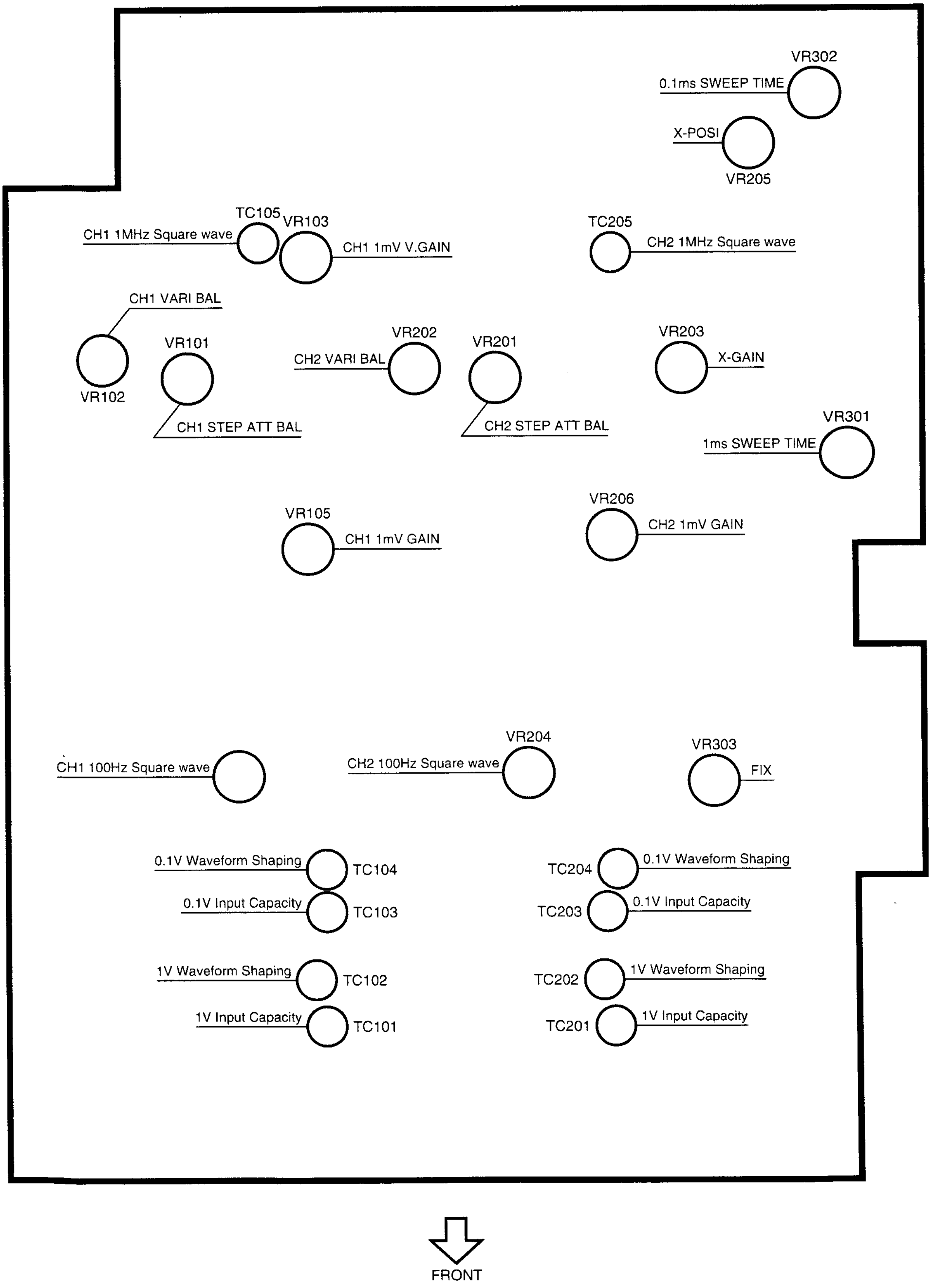
CS-4125/CS-4135 ADJUSTMENT

SWEEP UNIT (X74-1610-0X)


VR401
ALT Start
FRONT

CS-4125/CS-4135 ADJUSTMENT

ATTENUATOR UNIT (X75-1250-0X)


VR302
0.1ms SWEEP TIME
X-POSI
VR205
TC105
CH1 1MHz Square wave
VR103
CH1 1mV V.GAIN
TC205
CH2 1MHz Square wave
CH1 VARI BAL
VR102
VR101
CH1 STEP ATT BAL
VR202
CH2 VARI BAL
VR201
CH2 STEP ATT BAL
VR203
X-GAIN
VR301
1ms SWEEP TIME
VR105
CH1 1mV GAIN
VR206
CH2 1mV GAIN
CH1 100Hz Square wave
VR204
CH2 100Hz Square wave
VR303
FIX
0.1V Waveform Shaping
TC104
0.1V Input Capacity
TC103
1V Waveform Shaping
TC102
1V Input Capacity
TC101
TC204
0.1V Waveform Shaping
TC203
0.1V Input Capacity
TC202
1V Waveform Shaping
TC201
1V Input Capacity
FRONT

CS-4125 (~S/NO.7121000) TROUBLESHOOTING

If any of these setups is incorrect, even a normal unit may function abnormally.
If there is any function that you are not familiar with, confirm the instruction manual.
If the operation is abnormal even when you operate the unit properly, remove the top case and bottom panel.

CAUTION

There are very hazardous high voltage parts inside the set.

Ensure that all of the PC boards are connected properly without stripping off of connectors or soldering defect.
Some of the troubles occurring with the unit can be restored to normal condition by performing correct adjustments. For the adjustment methods, refer to the adjustment procedures.
The circuit names mentioned in the following troubleshooting description are identical to the names used in the block diagram. Refer to the block diagram.

Start checking with the power supply circuitry.
  Collector of Q301: +140 V
  Collector of Q303: +8 V
  Collector of Q304: +5 V
  Collector of Q305: -8 V
  OK: Go to next step.
  NG: There is a problem in the power supply circuitry. Check the regulator circuit.

a: No spot is displayed on the CRT in the X-Y mode.
Check the voltages at pins 1 and 3 of CN201, X73-2090.
- OK: Check the voltages at pins 1 and 4 of W103, X73-2090.
  - OK: There is a problem in the blanking amp section. (Go to b.)
  - NG: There is a problem in the vertical amp section.
- NG: There is a problem in the horizontal amp section. (Go to c.)

b: Check if the voltage at W401, X72-2090, is normal.
- OK: There is a problem in the blanking amp.
- NG: There is a problem in the high-voltage circuit.

c: Short-circuit the base of Q202, X72-2090, and the base of Q214.
If spot is displayed:
  There is a problem in the circuitry before the X-amp. (Go to d.)
If spot is not displayed:
  There is a problem in the horizontal final amp.

d: Short-circuit the base of Q224, X75-1220, and the base of Q231.
If spot is displayed:
  There is a problem in the vertical amp.
If spot is not displayed:
  There is a problem in the X-amp.

e: Trace is not displayed in the AUTO mode.
Measure the waveform at the emitter of Q308, X75-1220.
- OK: Measure the waveform of the horizontal final amp and check for abnormality.
- NG: Measure the waveforms of the sweep gate, sweep, sweep stop and hold-off and check for abnormality.

f: Triggering is not possible.
Measure the waveform at the base of Q420, X74-1600.
- OK: There is a problem in the TRIG LEVEL or TRIG COUPLING selector.
- NG: There is a problem in the TRIG SOURCE selector.

g: Trace is not displayed.
Short-circuit pins 7 and 8 of W555, X75-1220, and check if the trace is displayed near the CRT center.
- OK: There is a problem in the circuitry before the channels selector. Identify the defective position by shorting the signal lines.
- NG: There is a problem in the vertical final amp.

h: TV sync is not possible.
Measure the waveform at the base of Q410, X74-1600.
- OK: Measure the waveform at the collector of Q417, X74-1600.
  - OK: There is a problem in the TRIG COUPLING selector.
  - NG: There is a problem in the TV sync signal separation.
- NG: There is a problem in the TRIG SOURCE selector.

* Check both TV-FRAME and TV-LINE.

i: The input signals of the two channels are not displayed correctly.
Check pins 1 and 2 of CN56, X75-1220.
V-MODE:
  With CH1, pin 1 should be H and pin 2 should be L.
  With CH2, pin 1 should be L and pin 2 should be H.
- OK: There is a problem in the circuitry before the channels elector of each channel.
- NG: There is a problem in the channel control.

j: ADD operation does not occur.
There is a problem in Q101 of X73-2090.

k: CHOP sweep does not occur.

Check the waveform at pin 3 of IC401, X74-1600.
OK: There is a problem in the channel control.
NG: Check the waveform at pin 2 of IC403, X74-1600.
    OK: There is a problem in the ALT-CHOP selector.
    NG: There is a problem in the CHOP generator.

l: Auto free-run does not occur.

Check that the voltage at Q423, X74-1600, is +5 V.
OK: There is a problem in the sweep gate.
NG: There is a problem in the auto free-run circuit.

If any of these setups is incorrect, even a normal unit may function abnormally.
If there is any function that you are not familiar with, confirm the instruction manual.
If the operation is abnormal even when you operate the unit properly, remove the top case and bottom panel.

CAUTION

There are very hazardous high voltage parts inside the set.

Ensure that all of the PC boards are connected properly without stripping off of connectors or soldering defect.
Some of the troubles occurring with the unit can be restored to normal condition by performing correct adjustments. For the adjustment methods, refer to the adjustment procedures.
The circuit names mentioned in the following troubleshooting description are identical to the names used in the block diagram. Refer to the block diagram.

Start checking with the power supply circuitry.
X73-2150
Collector of Q301 : +140 V
Collector of Q303 : +8 V
Pin1 of IC303 : +5 V
Collector of Q305 : -8 V
Collector of Q306 : +80 V
OK: Go to next step.
NG: There is a problem in the power supply circuitry. Check the regulator circuit.

a: No spot is displayed on the CRT in the X-Y mode.
Check the voltages at pins 1 and 4 of CN551, X73-2150.
OK: Check the voltages at pins 1 and 4 of W103, X73-2150.
  OK:There is a problem in the blanking amp section. (Go to b.)
  NG: There is a problem in the vertical amp section.
NG: There is a problem in the horizontal amp section. (Go to c.)

b: Check if the voltage at W401, X72-2150, is normal.
OK: There is a problem in the blanking amp.
NG: There is a problem in the high-voltage circuit.

c: Short-circuit the base of Q202, X72-2150, and the base of Q214.
If spot is displayed:
  There is a problem in the circuitry before the X-amp. (Go to d.)
If spot is not displayed:
  There is a problem in the horizontal final amp.

d: Short-circuit the base of Q224, X75-1250, and the base of Q231.
If spot is displayed:
  There is a problem in the vertical amp.
If spot is not displayed:
  There is a problem in the X-amp.

e: Trace is not displayed in the AUTO mode.
Measure the waveform at the emitter of Q308, X75-1250.
OK: Measure the waveform of the horizontal final amp and check for abnormality.
NG: Measure the waveforms of the sweep gate, sweep, sweep stop and hold-off and check for abnormality.

f: Triggering is not possible.
Measure the waveform at the base of Q420, X74-1610.
OK: There is a problem in the TRIG LEVEL or TRIG COUPLING selector.
NG: There is a problem in the TRIG SOURCE selector.

g: Trace is not displayed.
Short-circuit pins 7 and 8 of W555, X75-1250, and check if the trace is displayed near the CRT center.
OK: There is a problem in the circuitry before the channels selector. Identify the defective position by shorting the signal lines.
NG: There is a problem in the vertical final amp.

h: TV sync is not possible.
Measure the waveform at the base of Q410, X74-1610.
OK: Measure the waveform at the collector of Q417, X74-1610.
  OK: There is a problem in the TRIG COUPLING selector.
  NG: There is a problem in the TV sync signal separation.
NG: There is a problem in the TRIG SOURCE selector.
* Check both TV-FRAME and TV-LINE.

i: The input signals of the two channels are not displayed correctly.
Check pins 1 and 2 of CN56, X75-1250.
V-MODE:
  With CH1, pin 1 should be H and pin 2 should be L.
  With CH2, pin 1 should be L and pin 2 should be H.
OK: There is a problem in the circuitry before the channels elector of each channel.
NG: There is a problem in the channel control.

j: ADD operation does not occur.
There is a problem in Q101 of X73-2150.

k: CHOP sweep does not occur.
Check the waveform at pin 3 of IC401, X74-1610.
OK: There is a problem in the channel control.
NG: Check the waveform at pin 2 of IC403, X74-1610.
  OK: There is a problem in the ALT-CHOP selector.
  NG: There is a problem in the CHOP generator.

l: Auto free-run does not occur.
Check that the voltage at Q423, X74-1610, is +5 V.
OK: There is a problem in the sweep gate.
NG: There is a problem in the auto free-run circuit.

PARTS LIST

CS-4125

~S/NO.7121000

REF.NO	PARTS NO	NAME & DESCRIPTION
	B41-2078-04	CAUTION LABEL
	B41-2086-04	CAUTION LABEL;PL GND 3LANG.
	B42-3819-05	SERIAL NO. PLATE
	B42-3820-05	LABEL;CARTON BOX
	B42-6090-04	LABEL;MADE IN TAIWAN
	B63-0240-00	INSTRUCTION MANUAL;JAPANESE
	B63-0248-00	INSTRUCTION MANUAL;ENG./CHINA
	E30-1947-05	BS POWER CORD
	E30-1950-05	JIS POWER CORD
	E30-1951-05	UL/CSA POWER CORD
	E30-1952-05	CEE POWER CORD
	E30-1953-05	SAA POWER CORD
	E38-1160-05	WIRE ASS'Y;17P
	F05-5015-05	FUSE(5X20MM) 0.5A/250V
	F05-8012-05	FUSE(5X20MM) 0.8A/250V
	G16-0609-04	RUBBER SHEET
	H10-2886-02	FOAMED STYRENE PAD;FRONT
	H10-2887-02	FOAMED STYRENE PAD;REAR
	H20-1749-08	VINYL COVER
	H53-0171-04	CARTON BOX
	LN322GP	LED;GREEN
1	A01-4043-12	CASE
2	A10-1500-01	CHASSIS;BOTTOM
3	A13-2217-04	FRAME;RIGHT
4	A13-2218-04	FRAME;LEFT
5	A40-0717-02	PLATE;BOTTOM
6	A63-0194-01	MOLD PANEL;FRONT
7	A63-0195-01	MOLD PANEL;REAR
8	A83-0078-02	REAR PANEL
9	B11-0518-04	FILTER
10	D21-0942-04	EXTENSION SHAFT
11	E03-0218-05	AC INLET
12	E21-0686-04	TERMINAL;CAL
14	E38-1164-05	WIRE ASS'Y;GND
16	F11-1281-14	CRT SHIELD
17	F20-3032-04	INSULATOR
18	G13-0756-03	CUSHION
19	J02-0540-05	LEG
20	J19-1695-03	HOLDER
21	J21-4923-04	BRACKET;SWEEP UNIT
22	J21-4924-03	BRACKET;CRT
23	K01-0561-02	HANDLE
24	K24-3005-04	PUSH SW;POWER
25	K24-3010-14	PUSH SW
26	K27-3618-14	LEVER
27	K29-0877-04	KNOB
28	K29-0890-03	KNOB;ATT
29	K29-0891-04	KNOB;VARI
30	L07-1529-05	POWER TRANSFORMER
32	X73-2090-00	FINAL UNIT
33	X74-1600-00	SWEEP UNIT
34	X75-1220-00	ATTENUATOR UNIT
35	D14-363GY/123	CRT

CS-4125

Y70-2060-00

REF.NO	PARTS NO	NAME & DESCRIPTION
	B41-2078-14	CAUTION LABEL
	B41-2086-04	CAUTION LABEL;PL GND 3LANG.
	B42-3819-05	SERIAL NO. PLATE
	B42-3820-05	LABEL;CARTON BOX
	B42-6090-04	LABEL;MADE IN TAIWAN
	B63-0301-08	INSTRUCTION MANUAL;JAPANESE
	B63-0302-08	INSTRUCTION MANUAL;ENG./CHINA
	E30-1950-05	JIS POWER CORD
	E30-1951-05	UL/CSA POWER CORD
	E30-1952-05	CEE POWER CORD
	E30-1953-05	SAA POWER CORD
	E30-1963-15	BS POWER CORD
	F05-5015-05	FUSE(5X20MM) 0.5A/250V
	F05-8012-05	FUSE(5X20MM) 0.8A/250V
	G16-0609-04	RUBBER SHEET
	H10-2886-02	FOAMED STYRENE PAD;FRONT
	H10-2887-02	FOAMED STYRENE PAD;REAR
	H20-1749-08	VINYL COVER
	H53-0171-14	CARTON BOX
D4	LN322GP	LED;GREEN
1	A01-4043-12	CASE
2	A10-1500-11	CHASSIS
3	A13-2217-04	FRAME;RIGHT
4	A13-2218-14	FRAME;LEFT
5	A40-0717-02	PLATE;BOTTOM
6	A63-0195-01	MOLD PANEL;REAR
7	A63-0251-01	MOLD PANEL;FRONT
8	A83-0078-02	REAR PANEL
9	B11-0518-04	FILTER
10	D21-0942-04	EXTENSION SHAFT
11	E03-0218-05	AC INLET
12	E21-0686-04	TERMINAL;CAL
14	E38-1164-05	WIRE ASS'Y;GND
16	F11-1281-14	CRT SHIELD
17	F20-3032-04	INSULATOR
18	G13-0765-03	CUSHION
19	J02-0540-05	LEG
20	J19-1695-03	HOLDER
21	J21-4923-04	BRACKET;SWEEP UNIT
22	J21-4924-13	BRACKET;CRT
23	K01-0561-02	HANDLE
24	K24-3005-04	PUSH SW;POWER
25	K24-3010-14	PUSH SW
26	K27-3618-14	LEVER
27	K29-0877-04	KNOB
28	K29-0890-03	KNOB;ATT
29	K29-0891-04	KNOB;VARI
30	L07-1529-05	POWER TRANSFORMER
32	X73-2150-01	FINAL UNIT
33	X74-1610-01	SWEEP UNIT
34	X75-1250-01	ATTENUATOR UNIT
35	150BTB31A(1G)	CRT

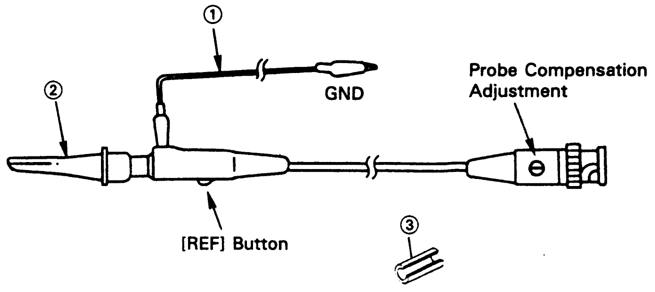
PARTS LIST

CS-4135

Y70-2090-00

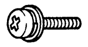
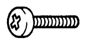
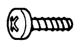
REF.NO	PARTS NO	NAME & DESCRIPTION
	B41-0710-14	CAUTION LABEL;HIGH VOLTAGE
	B41-2082-04	CAUTION LABEL
	B41-2086-04	CAUTION LABEL;PL GND 3LANG.
	B42-3819-05	SERIAL NO. PLATE
	B42-3820-05	LABEL;CARTON BOX
	B42-6090-04	LABEL;MADE IN TAIWAN
	B63-0301-08	INSTRUCTION MANUAL;JAPANESE
	B63-0302-08	INSTRUCTION MANUAL;ENG./CHINA
	E30-1950-05	JIS POWER CORD
	E30-1951-05	UL/CSA POWER CORD
	E30-1952-05	CEE POWER CORD
	E30-1953-05	SAA POWER CORD
	E30-1963-15	BS POWER CORD
	E38-1446-05	WIRE ASS'Y;CRT
	F05-3112-05	FUSE(5X20MM) 0.3AT/250V
	F05-5016-05	FUSE(5X20MM) 0.5AT/250V
	G16-0618-04	SHEET
	G16-0620-04	SHEET
	H10-2886-02	FOAMED STYRENE PAD;FRONT
	H10-2887-02	FOAMED STYRENE PAD;REAR
	H20-1749-08	VINYL COVER
	H53-0221-04	CARTON BOX
D4	LN322GP	LED;GREEN
1	A01-4043-12	CASE
2	A10-1500-11	CHASSIS
3	A13-2217-04	FRAME;RIGHT
4	A13-2218-14	FRAME;LEFT
5	A40-0717-02	PLATE;BOTTOM
6	A63-0195-01	MOLD PANEL;REAR
7	A63-0223-01	MOLD PANEL;FRONT
8	A83-0078-02	REAR PANEL
9	B11-0518-04	FILTER
10	D21-0942-04	EXTENSION SHAFT
11	E03-0218-05	AC INLET
12	E21-0686-04	TERMINAL;CAL
13	E23-0552-04	EARTH TERMINAL
14	E38-1164-05	WIRE ASS'Y;GND
15	F10-2507-03	SHIELD PLATE;CENTER
16	F11-1286-04	CRT SHIELD
17	F20-3032-04	INSULATOR
18	G13-0756-03	CUSHION
19	J02-0540-05	LEG
20	J19-1695-03	HOLDER
21	J21-4923-04	BRACKET;SWEEP UNIT
22	J21-4924-13	BRACKET;CRT
23	K01-0561-02	HANDLE
24	K24-3005-04	PUSH SW;POWER
25	K24-3010-14	PUSH SW
26	K27-3618-14	LEVER
27	K29-0877-04	KNOB
28	K29-0890-03	KNOB;ATT
29	K29-0891-04	KNOB;VARI
30	L07-1535-05	POWER TRANSFORMER
31	L39-1406-05	ROTATION COIL
32	X73-2150-00	FINAL UNIT
33	X74-1610-00	SWEEP UNIT
34	X75-1250-00	ATTENUATOR UNIT
35	150VTM31A	CRT

MODEL PC-41 (SWITCHABLE PROBE)



ITEM	DESCRIPTION	PARTS NO.
①	Ground Wire Assembly	E30-1883-08
②	Retractable Hook Tip	E29-0540-08
③	Marker (Orange)	B42-1950-08

SCREWS

	Parts No.	Parts Name		Figure
A	N09-0623-04	SCREW, SEMS PAN HD	(M3 x 8)	
B	N09-0748-04	SCREW, SEMS PAN HD	(M4 x 12)	
C	N14-0622-05	NUT, WITH TOOTH	(M4)	
D	N19-0748-05	WASHER		
E	N30-4010-41	SCREW, PAN HD	(M4 x 10)	
F	N88-3008-41	SCREW, FLAT HD TAPTITE	(3 x 8)	
G	N89-3008-41	SCREW, BINDING TAPTITE	(3 x 8)	
H	N89-3010-41	SCREW, BINDING TAPTITE	(3 x 10)	

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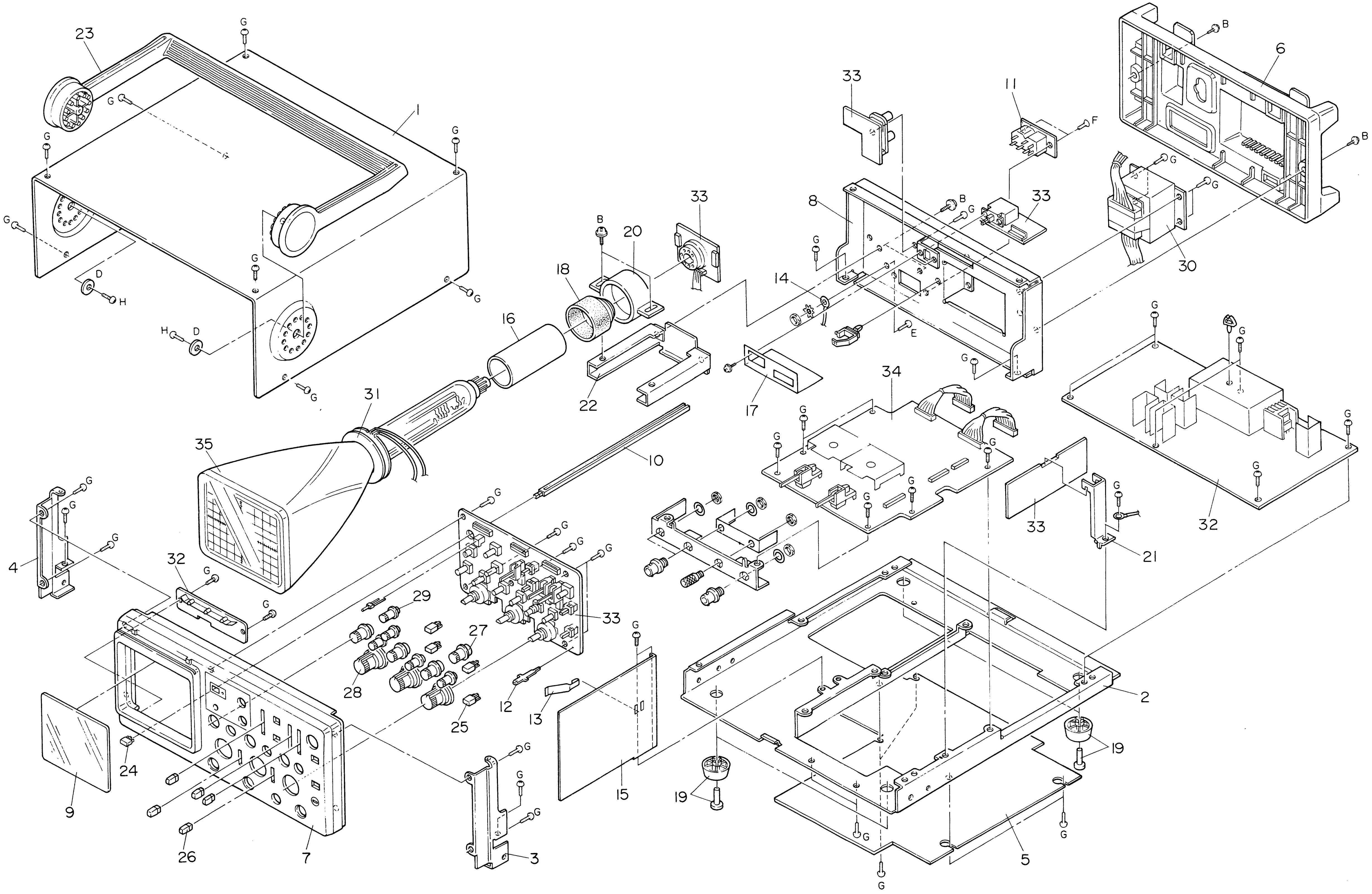

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PARTS LIST

CS-4125 (~S/NO.7121000) FINAL UNIT

X73-2090-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	E23-0557-14	EARTH LUG;THERMAL FUSE			
	F01-0867-05	HEAT SINK;HIGH VOLTAGE			
	F01-2329-05	HEAT SINK			
	F11-1282-14	SHIELD CASE			
	J73-0363-02	PCB (UNMOUNTED)			
	N09-0623-04	SCREW,SEMS PAN HD M3X8			
C104	CC45FCH1H150J	CAP. CERAMIC	15P	5%	50V
C105	NO USE				
C106	CC45FCH1H181J	CAP. CERAMIC	180P	5%	50V
C107	CF92FV1H103J	CAP. FILM	0.01	5%	50V
C108	CF92FV1H103J	CAP. FILM	0.01	5%	50V
C109	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C110	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C111	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C112	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C113	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C114	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C115	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C116	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C117	NO USE				
C118	C91-2662-05	CAP. FILM	0.1	10%	250V
C119	C91-2538-05	CAP. FILM	0.1	10%	63V
C120	C91-2662-05	CAP. FILM	0.1	10%	250V
C121	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C122	NO USE				
C123	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C124	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C125	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C126	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C127	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C201	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C202	CC45FSL1H681J	CAP. CERAMIC	680P	5%	50V
C203	C91-1309-05	CAP. CERAMIC	0.01	10%	500V
C204	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C205	NO USE				
C206	C91-1309-05	CAP. CERAMIC	0.01	10%	500V
C207	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C208	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C209	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C210	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C211	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C212	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C213	CC45FSL1H331J	CAP. CERAMIC	330P	5%	50V
C214	CK45B2H332K	CAP. CERAMIC	3300P	10%	500V
C301	CE04W2E101M	CAP. ELECTRO	100	20%	250V
C302	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C303	CE04EW1C472M	CAP. ELECTRO	4700	20%	16V
C304	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C305	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C306	CE04EW1C472M	CAP. ELECTRO	4700	20%	16V
C307	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C308	CE04HW1H010M	CAP. ELECTRO	1	20%	50V
C309	CE04LW1A330M	CAP. ELECTRO	33	20%	10V
C310	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C311	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C401	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C402	CE04LW1C470M	CAP. ELECTRO	47	20%	16V
C403	CE04EW1V221M	CAP. ELECTRO	220	20%	35V
C404	CK45E3D102P	CAP. CERAMIC	1000P		2KV
C405	C91-2663-05	CAP. FILM	4700P	5%	2KV
C406	C91-2663-05	CAP. FILM	4700P	5%	2KV
C407	NO USE				
C408	CK45B2H102K	CAP. CERAMIC	1000P	10%	500V
C409	CK45E3D102P	CAP. CERAMIC	1000P		2KV
C410	C91-2585-05	CAP. FILM	0.01	10%	250V
C411	C91-2663-05	CAP. FILM	4700P	5%	2KV
C412	C91-2663-05	CAP. FILM	4700P	5%	2KV
C413	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C414	NO USE				
C415	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C416	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C417	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C418	CK45FB1H102K	CAP. CERAMIC	1000P	10%	50V
C419	NO USE				
C420	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C421	NO USE				
C422	CE04LW1C101M	CAP. ELECTRO	100	20%	16V
C423	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C501	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
C502	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
CN101	E40-5066-05	PIN CONNECTOR	9P		
CN102	E40-5066-05	PIN CONNECTOR	9P		
CN151	E40-3237-05	PIN CONNECTOR	2P		
CN201	E40-3238-05	PIN CONNECTOR	3P		

REF.NO	PARTS NO	NAME & DESCRIPTION	
CN202	E40-3237-05	PIN CONNECTOR	2P
CN301	E40-3242-05	PIN CONNECTOR	7P
CN351	E40-3237-05	PIN CONNECTOR	2P
CN503	E40-3238-05	PIN CONNECTOR	3P
CN504	E40-3238-05	PIN CONNECTOR	3P
D101	1SS133	DIODE	
D102	1SS133	DIODE	
D103	1SS133	DIODE	
D104	1SS133	DIODE	
D105	1SS133	DIODE	
D106	1SS133	DIODE	
D201	1SS83	DIODE	
D202	MA700	DIODE	
D203	1SS133	DIODE	
D204	1SS83	DIODE	
D301	1SS133	DIODE	
D302	NO USE		
D303	MTZ10JC	DIODE,ZENER	
D304	MTZ10JC	DIODE,ZENER	
D305	MTZ5.1JB	DIODE,ZENER	
D306	MTZ5.1JB	DIODE,ZENER	
D307	1G4B-42	DIODE,BRIDGE	
D308	1G4B-42	DIODE,BRIDGE	
D401	1SS133	DIODE	
D402	DHM3FJ60	DIODE	
D403	DHM3FJ60	DIODE	
D404	1SS83	DIODE	
D405	1SS83	DIODE	
D406	1SS83	DIODE	
D407	1SS83	DIODE	
D408	1SS133	DIODE	
D409	1SS133	DIODE	
D410	1SS133	DIODE	
D411	1SS133	DIODE	
F401	F53-0107-05	THERMAL FUSE	
IC301	NJM4558D	IC,DUAL OP-AMP	
IC302	NJM4558D	IC,DUAL OP-AMP	
L401	L33-0841-05	FERRI INDUCTOR	100
L402	L33-0841-05	FERRI INDUCTOR	100
L403	L33-0840-05	FERRI INDUCTOR	1000
NL401	RA-201P-V6-2A	NEON LAMP	
Q101	2SC1740S(R,S)	TR. SI, NPN	
Q102	2SA933S(R,S)	TR. SI, PNP	
Q103	2SA933S(R,S)	TR. SI, PNP	
Q104	2SC1923(O)	TR. SI, NPN	
Q105	2SC1923(O)	TR. SI, NPN	
Q106	2SA1005(K)	TR. SI, PNP	
Q107	2SA1005(K)	TR. SI, PNP	
Q108	2SC1923(O)	TR. SI, NPN	
Q109	2SC1923(O)	TR. SI, NPN	
Q110	2SA1360(Y)	TR. SI, PNP	
Q111	2SA1360(Y)	TR. SI, PNP	
Q112	2SC3787(S)	TR. SI, NPN	
Q113	2SC3787(S)	TR. SI, NPN	
Q201	2SC1740S(R,S)	TR. SI, NPN	
Q202	2SA933S(R,S)	TR. SI, PNP	
Q203	2SK583	FET, N-CHANNEL	
Q204	2SK583	FET, N-CHANNEL	
Q205	2SA1005(K)	TR. SI, PNP	
Q206	2SA1005(K)	TR. SI, PNP	
Q207	2SA1209(S)	TR. SI, PNP	
Q208	2SA1209(S)	TR. SI, PNP	
Q209	2SC1923(O)	TR. SI, NPN	
Q210	2SC1923(O)	TR. SI, NPN	
Q211	2SC2911(S)	TR. SI, NPN	
Q212	2SC2911(S)	TR. SI, NPN	
Q213	NO USE		
Q214	2SA933S(R,S)	TR. SI, PNP	
Q215	2SA933S(R,S)	TR. SI, PNP	
Q301	2SA1381(D)	TR. SI, PNP	
Q302	2SC2909(S)	TR. SI, NPN	
Q303	2SA1534A(R)	TR. SI, PNP	
Q304	2SA1534A(R)	TR. SI, PNP	
Q305	2SC3940A(R)	TR. SI, NPN	
Q351	2SC3940A(R)	TR. SI, NPN	
Q352	2SA1534A(R)	TR. SI, PNP	
Q401	2SD1666(R)	TR. SI, NPN	
Q402	2SA933S(R,S)	TR. SI, PNP	
Q403	2SC1740S(R,S)	TR. SI, NPN	
Q404	2SA933S(R,S)	TR. SI, PNP	

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
Q405	2SA1091(O)	TR. SI, PNP			
Q406	2SA1091(O)	TR. SI, PNP			
Q407	2SA1091(O)	TR. SI, PNP			
Q408	2SA1091(O)	TR. SI, PNP			
Q409	2SA1208(S)	TR. SI, PNP			
Q410	2SC2910(S)	TR. SI, NPN			
Q411	2SA933S(R,S)	TR. SI, PNP			
R101	RN14BK2C2700F	RES. METAL FILM	270	1%	1/6W
R102	RN14BK2C2700F	RES. METAL FILM	270	1%	1/6W
R103	NO USE				
R104	RN14BK2C1201F	RES. METAL FILM	1.2K	1%	1/6W
R105	RN14BK2C1201F	RES. METAL FILM	1.2K	1%	1/6W
R106	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R107	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R108	RN14BK2C6200F	RES. METAL FILM	620	1%	1/6W
R109	RN14BK2C9100F	RES. METAL FILM	910	1%	1/6W
R110	RN14BK2C9100F	RES. METAL FILM	910	1%	1/6W
R111	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R112	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R113	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R114	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R115	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R116	RD14BB2C331J	RES. CARBON	330	5%	1/6W
R117	NO USE				
R118	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R119	RD14BB2C132J	RES. CARBON	1.3K	5%	1/6W
R120	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R121	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R122	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R123	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R124	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R125	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R126	R92-1654-05	RES. METAL FILM	22K	5%	2W
R127	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R132	R92-1654-05	RES. METAL FILM	22K	5%	2W
R133	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R138	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R139	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R140	NO USE				
R141	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R142	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R143	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R144	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R145	NO USE				
R146	R92-1654-05	RES. METAL FILM	22K	5%	2W
R150	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R151	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R152	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R153	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R154	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R155	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R158	R92-1654-05	RES. METAL FILM	22K	5%	2W
R162	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R163	RN14BK2C68R0F	RES. METAL FILM	68.0	1%	1/6W
R164	RN14BK2C68R0F	RES. METAL FILM	68.0	1%	1/6W
R165	RN14BK2C2002F	RES. METAL FILM	20K	1%	1/6W
R166	RN14BK2C2002F	RES. METAL FILM	20K	1%	1/6W
R167	NO USE				
R168	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R169	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R170	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R171	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R172	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R173	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R201	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R202	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R203	NO USE				
R204	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R205	RD14BB2C304J	RES. CARBON	300K	5%	1/6W
R206	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R207	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R208	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R209	RD14BB2C393J	RES. CARBON	39K	5%	1/6W
R210	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R211	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R212	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R213	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R214	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R215	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R216	RN14BK2E3902F	RES. METAL FILM	39K	1%	1/4W
R217	RN14BK2E4302F	RES. METAL FILM	43K	1%	1/4W
R218	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R219	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R220	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R221	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R222	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R223	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R224	R92-1685-05	RES. METAL FILM	30K	5%	2W
R225	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R226	RD14BB2C104J	RES. CARBON	100K	5%	1/6W

REF.NO	PARTS NO	NAME & DESCRIPTION			
R227	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R228	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R229	RN14BK2E3902F	RES. METAL FILM	39K	1%	1/4W
R230	RN14BK2E4302F	RES. METAL FILM	43K	1%	1/4W
R231	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R232	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R233	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R234	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R235	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R236	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R237	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R238	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R239	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R240	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R241	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R242	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R243	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R244	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R245	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R301	RD14KB3H751J	RES. CARBON	750	5%	5W
R302	RN14BK2E8202D	RES. METAL FILM	82K	0.5%	1/4W
R303	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R304	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R305	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R306	RN14BK2E4701D	RES. METAL FILM	4.7K	0.5%	1/4W
R307	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R308	RS14GB3D330J	RES. METAL FILM	33	5%	2W
R309	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R310	RN14BK2E1002D	RES. METAL FILM	10K	0.5%	1/4W
R311	RN14BK2E1002D	RES. METAL FILM	10K	0.5%	1/4W
R312	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R313	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R314	RN14BK2E1002D	RES. METAL FILM	10K	0.5%	1/4W
R315	RN14BK2E1602D	RES. METAL FILM	16K	0.5%	1/4W
R316	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R317	RS14GB3D270J	RES. METAL FILM	27	5%	2W
R318	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R319	RD14BB2C242J	RES. CARBON	2.4K	5%	1/6W
R320	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R321	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R322	RN14BK2C6201F	RES. METAL FILM	6.2K	1%	1/6W
R323	RS14GB3D161J	RES. METAL FILM	160	5%	2W
R324	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R325	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R351	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R401	RD14BB2C2R2J	RES. CARBON	2.2	5%	1/6W
R402	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R403	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R404	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R405	RD14BB2C334J	RES. CARBON	330K	5%	1/6W
R406	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R407	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R408	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R409	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R410	NO USE				
R411	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R412	NO USE				
R413	R92-1564-05	RES. METAL FILM	15M	1%	1/2W
R420	RN14BK2C6802F	RES. METAL FILM	68K	1%	1/6W
R421	R92-1652-05	RES. METAL FILM	12M	1%	1/2W
R427	RD14BB2E515J	RES. CARBON	5.1M	5%	1/4W
R428	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R429	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R430	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R431	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R432	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R433	RD14BB2C513J	RES. CARBON	51K	5%	1/6W
R434	RD14BB2C114J	RES. CARBON	110K	5%	1/6W
R435	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R436	RD14BB2C683J	RES. CARBON	68K	5%	1/6W
R437	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R438	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R439	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R440	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R441	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R442	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R443	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R444	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R445	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R446	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R447	RD14BB2E272J	RES. CARBON	2.7K	5%	1/4W
R448	RD14BB2C513J	RES. CARBON	51K	5%	1/6W
R449	RD14BB2C753J	RES. CARBON	75K	5%	1/6W
R450	RN14BK2E1204F	RES. METAL FILM	1.2M	1%	1/4W
R451	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R452	RD14BB2C753J	RES. CARBON	75K	5%	1/6W
R453	RD14BB2E242J	RES. CARBON	2.4K	5%	1/4W
T1	L19-0427-05	CONVERTOR TRANSFORMER			
TC101	C05-0470-05	CAP. TRIMMER	20P		

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
TP1	E23-1520-05	EARTH TERMINAL
TP2	E23-1520-05	EARTH TERMINAL
TP3	E23-1520-05	EARTH TERMINAL
TP4	E23-1520-05	EARTH TERMINAL
TP5	E23-1520-05	EARTH TERMINAL
TP6	E23-1520-05	EARTH TERMINAL
VR101	R12-0871-05	RES. SEMI FIXED 470 B
VR102	R12-5085-05	RES. SEMI FIXED 100 B
VR103	R12-5085-05	RES. SEMI FIXED 100 B
VR201	R12-1589-05	RES. SEMI FIXED 1KB
VR202	R12-5085-05	RES. SEMI FIXED 100 B
VR203	R12-1591-05	RES. SEMI FIXED 4.7K
VR301	R12-1589-05	RES. SEMI FIXED 1KB
VR401	R12-8525-05	RES. SEMI FIXED 1MB
VR402	R12-5560-05	RES. SEMI FIXED 100KB
VR403	R12-5560-05	RES. SEMI FIXED 100KB
W103	E38-1156-05	WIRE ASS'Y;Y-CRT
W401	E38-1155-05	WIRE ASS'Y;HIGH VOLTAGE

CS-4125 FINAL UNIT

X73-2150-01

REF.NO	PARTS NO	NAME & DESCRIPTION			
	E23-0557-14	EARTH LUG;THERMAL FUSE			
	F01-0867-05	HEAT SINK;HIGH VOLTAGE			
	F01-2329-05	HEAT SINK			
	F11-1282-24	SHIELD CASE			
	J73-0408-02	PCB (UNMOUNTED)			
	N09-0623-04	SCREW,SEMS PAN HD M3X8			
C104	CC45FCH1H150J	CAP. CERAMIC	15P	5%	50V
C105	CC45FCH1H080D	CAP. CERAMIC	8P	0.5P	50V
C106	CC45FCH1H080D	CAP. CERAMIC	8P	0.5P	50V
C107	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C108	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C109	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C110	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C111	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C112	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C113	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C114	CC45FCH2H040C	CAP. CERAMIC	4P	0.25P	500V
C115	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C116	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C117	NO USE				
C118	C91-2662-05	CAP. FILM	0.1	10%	250V
C119	C91-2538-05	CAP. FILM	0.1	10%	63V
C120	C91-2662-05	CAP. FILM	0.1	10%	250V
C121	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C122	NO USE				
C123	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C124	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C125	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C126	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C127	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C130	CC45FCH1H121J	CAP. CERAMIC	120P	5%	50V
C201	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C202	CC45FSL1H681J	CAP. CERAMIC	680P	5%	50V
C203	C91-1309-05	CAP. CERAMIC	0.01	10%	500V
C204	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C205	NO USE				
C206	C91-1309-05	CAP. CERAMIC	0.01	10%	500V
C207	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C208	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C209	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C210	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C211	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C212	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C302	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C303	CE04EW1C472M	CAP. ELECTRO	4700	20%	16V
C304	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C305	NO USE				
C306	CE04EW1C472M	CAP. ELECTRO	4700	20%	16V
C307	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C308	CE04HW1H010M	CAP. ELECTRO	1	20%	50V
C309	CE04LW1A330M	CAP. ELECTRO	33	20%	10V
C310	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C311	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C332	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C333	CE04EW2E101M	CAP. ELECTRO	100	20%	250V
C401	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C402	CE04LW1C470M	CAP. ELECTRO	47	20%	16V
C403	CE04EW1V221M	CAP. ELECTRO	220	20%	35V
C404	CK45E3D102P	CAP. CERAMIC	1000P		2KV
C405	C91-2663-05	CAP. FILM	4700P	5%	2KV
C406	C91-2663-05	CAP. FILM	4700P	5%	2KV
C407	NO USE				
C408	CK45FB2H102K	CAP. CERAMIC	1000P	10%	500V
C409	CK45E3D102P	CAP. CERAMIC	1000P		2KV
C410	C91-2585-05	CAP. MYLAR	0.01	10%	250V
C411	C91-2663-05	CAP. FILM	4700P	5%	2KV
C412	C91-2663-05	CAP. FILM	4700P	5%	2KV
C413	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C414	NO USE				
C415	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C416	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C417	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C418	CK45FB1H102K	CAP. CERAMIC	1000P	10%	50V
C419	NO USE				
C420	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C421	NO USE				
C422	CE04LW1C101M	CAP. ELECTRO	100	20%	16V
C423	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C501	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
C502	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
CN101	E40-5066-05	PIN CONNECTOR	9P		
CN102	E40-5066-05	PIN CONNECTOR	9P		
CN151	E40-3237-05	PIN CONNECTOR	2P		
CN301	E40-3242-05	PIN CONNECTOR	7P		
CN351	E40-3237-05	PIN CONNECTOR	2P		
CN503	E40-3238-05	PIN CONNECTOR	3P		
CN504	E40-3238-05	PIN CONNECTOR	3P		
CN551	E40-3238-05	PIN CONNECTOR	3P		
CN556	E40-3237-05	PIN CONNECTOR	2P		
D101	1SS133	DIODE			
D102	1SS133	DIODE			
D103	1SS133	DIODE			
D104	1SS133	DIODE			
D105	1SS133	DIODE			
D106	1SS133	DIODE			
D107	1SS133	DIODE			
D108	1SS133	DIODE			
D201	1SS83	DIODE			
D202	MA700	DIODE			
D203	1SS133	DIODE			
D204	1SS83	DIODE			
D301	1SS133	DIODE			
D302	NO USE				
D303	MTZ10JC	DIODE,ZENER			
D304	MTZ10JC	DIODE,ZENER			
D305	MTZ5.1JB	DIODE,ZENER			
D306	MTZ5.1JB	DIODE,ZENER			
D307	1G4B-42	DIODE,BRIDGE			
D312	1G4B-42	DIODE,BRIDGE			
D401	1SS133	DIODE			
D402	DHM3FJ60	DIODE			
D403	DHM3FJ60	DIODE			
D404	1SS83	DIODE			
D405	1SS83	DIODE			
D406	1SS83	DIODE			
D407	1SS83	DIODE			
D408	1SS133	DIODE			
D409	1SS133	DIODE			
D410	1SS133	DIODE			
D411	1SS133	DIODE			
F401	F53-0107-05	THERMAL FUSE			
IC301	NJM4558D	IC,DUAL OP-AMP			
IC302	NJM4558D	IC,DUAL OP-AMP			
L401	L40-1011-50	FERRI INDUCTOR	100UH		
L402	L40-1011-50	FERRI INDUCTOR	100UH		
L403	L40-1025-49	FERRI INDUCTOR	1MH		
NL401	RA-201P-V6-2A	NEON LAMP			
P1	E23-1520-05	EARTH TERMINAL			
P2	E23-1520-05	EARTH TERMINAL			
P3	E23-1520-05	EARTH TERMINAL			
P4	E23-1520-05	EARTH TERMINAL			
P5	E23-1520-05	EARTH TERMINAL			
P6	E23-1520-05	EARTH TERMINAL			
Q101	2SC1740S(R,S)	TR. SI, NPN			
Q102	2SA933ASLN(R,S)	TR. SI, PNP			
Q103	2SA933ASLN(R,S)	TR. SI, PNP			

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
Q104	2SC1923(O)	TR. SI, NPN			
Q105	2SC1923(O)	TR. SI, NPN			
Q106	2SA1005(K)	TR. SI, PNP			
Q107	2SA1005(K)	TR. SI, PNP			
Q108	2SC1923(O)	TR. SI, NPN			
Q109	2SC1923(O)	TR. SI, NPN			
Q110	2SA1360(Y)	TR. SI, PNP			
Q111	2SA1360(Y)	TR. SI, PNP			
Q112	2SC3787(S)	TR. SI, NPN			
Q113	2SC3787(S)	TR. SI, NPN			
Q201	2SC1740S(R,S)	TR. SI, NPN			
Q202	2SA933ASLN(R,S)	TR. SI, PNP			
Q203	2SK583	FET, N-CHANNEL			
Q204	2SK583	FET, N-CHANNEL			
Q205	2SA1005(K)	TR. SI, PNP			
Q206	2SA1005(K)	TR. SI, PNP			
Q207	2SA1209(R,S)	TR. SI, PNP			
Q208	2SA1209(R,S)	TR. SI, PNP			
Q209	2SC1923(O)	TR. SI, NPN			
Q210	2SC1923(O)	TR. SI, NPN			
Q211	2SC2911(S)	TR. SI, NPN			
Q212	2SC2911(S)	TR. SI, NPN			
Q213	NO USE				
Q214	2SA933ASLN(R,S)	TR. SI, PNP			
Q215	2SA933ASLN(R,S)	TR. SI, PNP			
Q301	2SA1381(D)	TR. SI, PNP			
Q302	2SC2909(S)	TR. SI, NPN			
Q303	2SA1534A(R)	TR. SI, PNP			
Q304	NO USE				
Q305	2SC3940A(R)	TR. SI, NPN			
Q306	2SA1534A(R)	TR. SI, PNP			
Q351	2SC3940A(R)	TR. SI, NPN			
Q352	2SA1534A(R)	TR. SI, PNP			
Q401	2SD1666(R)	TR. SI, NPN			
Q402	2SA933ASLN(R,S)	TR. SI, PNP			
Q403	2SC1740S(R,S)	TR. SI, NPN			
Q404	2SA933ASLN(R,S)	TR. SI, PNP			
Q405	2SA1091(O)	TR. SI, PNP			
Q406	2SA1091(O)	TR. SI, PNP			
Q407	2SA1091(O)	TR. SI, PNP			
Q408	2SA1091(O)	TR. SI, PNP			
Q409	2SA1208(S)	TR. SI, PNP			
Q410	2SC2910(S)	TR. SI, NPN			
Q411	2SA933ASLN(R,S)	TR. SI, PNP			
R101	RN14BK2C2700F	RES. METAL FILM	270	1%	1/6W
R102	RN14BK2C2700F	RES. METAL FILM	270	1%	1/6W
R103	NO USE				
R104	RN14BK2C1201F	RES. METAL FILM	1.2K	1%	1/6W
R105	RN14BK2C1201F	RES. METAL FILM	1.2K	1%	1/6W
R106	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R107	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R108	RN14BK2C6200F	RES. METAL FILM	620	1%	1/6W
R109	RN14BK2C9100F	RES. METAL FILM	910	1%	1/6W
R110	RN14BK2C9100F	RES. METAL FILM	910	1%	1/6W
R111	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R112	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R113	RN14BK2C2201F	RES. METAL FILM	2.2K	1%	1/6W
R114	RN14BK2C2201F	RES. METAL FILM	2.2K	1%	1/6W
R115	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R116	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R117	RD14BB2C563J	RES. CARBON	56K	5%	1/6W
R118	RD14BB2C511J	RES. CARBON	510	5%	1/6W
R119	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R120	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R121	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R122	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R123	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R124	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R125	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R126	NO USE				
R127	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R128	R92-1654-05	RES. METAL FILM	22K	5%	2W
R133	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R134	R92-1654-05	RES. METAL FILM	22K	5%	2W
R138	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R139	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R140	NO USE				
R141	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R142	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R143	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R144	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R147	R92-1654-05	RES. METAL FILM	22K	5%	2W
R150	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R151	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R152	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R153	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R154	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R155	RD14BB2E621J	RES. CARBON	620	5%	1/4W
R159	R92-1654-05	RES. METAL FILM	22K	5%	2W
R162	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R163	RN14BK2C68R0F	RES. METAL FILM	68.0	1%	1/6W
R164	RN14BK2C68R0F	RES. METAL FILM	68.0	1%	1/6W
R165	RN14BK2C2002F	RES. METAL FILM	20K	1%	1/6W
R166	RN14BK2C2002F	RES. METAL FILM	20K	1%	1/6W
R167	NO USE				
R168	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R169	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R170	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R171	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R172	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R173	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R174	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R201	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R202	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R203	NO USE				
R204	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R205	RD14BB2C304J	RES. CARBON	300K	5%	1/6W
R206	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R207	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R208	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R209	RD14BB2C243J	RES. CARBON	24K	5%	1/6W
R210	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R211	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R212	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R213	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R214	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R215	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R216	RN14BK2E3902F	RES. METAL FILM	39K	1%	1/4W
R217	RN14BK2E4302F	RES. METAL FILM	43K	1%	1/4W
R218	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R219	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R220	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R221	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R222	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R223	RD14BB2C242J	RES. CARBON	2.4K	5%	1/6W
R224	R92-1653-05	RES. METAL FILM	27K	5%	2W
R225	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R226	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R227	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R228	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R229	RN14BK2E3902F	RES. METAL FILM	39K	1%	1/4W
R230	RN14BK2E4302F	RES. METAL FILM	43K	1%	1/4W
R231	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R232	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R233	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R234	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R235	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R236	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R237	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R238	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R239	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R240	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R241	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R242	NO USE				
R243	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R244	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R245	NO USE				
R246	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R247	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R248	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R249	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R302	RN14BK2E8202F	RES. METAL FILM	82K	1%	1/4W
R303	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R304	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R305	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R306	RN14BK2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R307	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R308	RS14KB3F330J	RES. METAL FILM	33	5%	3W
R309	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R310	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
R311	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
R312	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R317	RS14KB3F270J	RES. METAL FILM	27	5%	3W
R318	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R319	RD14BB2C242J	RES. CARBON	2.4K	5%	1/6W
R320	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R321	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R322	RN14BK2C6201F	RES. METAL FILM	6.2K	1%	1/6W
R323	NO USE				
R324	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R325	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R332	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R333	NO USE				
R334	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R338	RS14KB3F161J	RES. METAL FILM	160	5%	3W

REF.NO	PARTS NO	NAME & DESCRIPTION			
R342	RN14BK2E1602F	RES. METAL FILM	16K	1%	1/4W
R343	RN14BK2C1002F	RES. METAL FILM	10K	1%	1/6W
R344	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R351	RD14BB2C120J	RES. CARBON	12	5%	1/6W
R373	RD14KB3H751J	RES. CARBON	750	5%	5W
R401	RD14BB2C2R2J	RES. CARBON	2.2	5%	1/6W
R402	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R403	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R404	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R405	RD14BB2C334J	RES. CARBON	330K	5%	1/6W
R406	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R407	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R408	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R409	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R410	NO USE				
R411	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R412	NO USE				
R413	R92-1564-05	RES. METAL FILM	15M	1%	1/2W
R420	RN14BK2C6802F	RES. METAL FILM	68K	1%	1/6W
R421	R92-1652-05	RES. METAL FILM	12M	1%	1/2W
R427	RD14BB2E515J	RES. CARBON	5.1M	5%	1/4W
R428	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R429	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R430	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R431	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R432	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R433	RD14BB2C513J	RES. CARBON	51K	5%	1/6W
R434	RD14BB2C114J	RES. CARBON	110K	5%	1/6W
R435	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R436	RD14BB2E683J	RES. CARBON	68K	5%	1/4W
R437	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R438	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R439	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R440	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R441	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R442	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R443	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R444	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R445	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R446	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R447	RD14BB2E272J	RES. CARBON	2.7K	5%	1/4W
R448	RD14BB2C513J	RES. CARBON	51K	5%	1/6W
R449	RD14BB2C753J	RES. CARBON	75K	5%	1/6W
R450	R92-1561-05	RES. METALGLACE	3.9M	5%	1/4W
R451	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R452	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R453	RD14BB2E242J	RES. CARBON	2.4K	5%	1/4W
T1	L19-0427-05	CONVERTOR TRANSFORMER			
TC101	C05-0469-05	CAP. TRIMMER	10P		
VR101	R12-0871-05	RES. SEMI FIXED	470 B		
VR102	R12-0869-05	RES. SEMI FIXED	100 B		
VR103	R12-0869-05	RES. SEMI FIXED	100 B		
VR201	R12-1590-05	RES. SEMI FIXED	2.2KB		
VR202	R12-0869-05	RES. SEMI FIXED	100 B		
VR203	R12-1591-05	RES. SEMI FIXED	4.7K		
VR301	R12-1589-05	RES. SEMI FIXED	1KB		
VR401	R12-8525-05	RES. SEMI FIXED	1MB		
VR402	R12-5560-05	RES. SEMI FIXED	100KB		
VR403	R12-5560-05	RES. SEMI FIXED	100KB		
W103	E38-1280-05	WIRE ASS'Y;Y-CRT			
W401	E38-1155-05	WIRE ASS'Y;HIGH VOLTAGE			

CS-4135 FINAL UNIT

X73-2150-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	A33-0505-04	REFLECTOR			
	E23-0557-14	EARTH LUG;THERMAL FUSE			
	E38-1281-05	WIRE ASS'Y;ILLUMINATION(CN403)			
	F01-0867-05	HEAT SINK;HIGH VOLTAGE			
	F01-2329-05	HEAT SINK			
	F01-2343-05	HEAT SINK			
	F11-1282-24	SHIELD CASE			
	J73-0408-02	PCB (UNMOUNTED)			
	N09-0623-04	SCREW,SEMS PAN HD M3X8			
A401	W02-0474-05	HIGH VOLTAGE BLOCK			
C104	CC45FCH1H6R8D	CAP. CERAMIC	6.8P	0.5P	50V
C105	NO USE				
C106	CC45FSL1H331J	CAP. CERAMIC	330P	5%	50V
C107	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C108	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C109	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C110	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C111	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C112	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C113	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C114	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C115	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C116	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C117	NO USE				
C118	C91-2662-05	CAP. FILM	0.1	10%	250V
C119	C91-2538-05	CAP. FILM	0.1	10%	63V
C120	C91-2662-05	CAP. FILM	0.1	10%	250V
C121	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C122	NO USE				
C123	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C124	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C125	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C126	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C127	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C128	CC45FCH1H120J	CAP. CERAMIC	12P	5%	50V
C129	CC45FCH1H120J	CAP. CERAMIC	12P	5%	50V
C130	CC45FCH1H121J	CAP. CERAMIC	120P	5%	50V
C201	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C202	CC45FSL1H681J	CAP. CERAMIC	680P	5%	50V
C203	C91-1309-05	CAP. CERAMIC	0.01	10%	500V
C204	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C205	NO USE				
C206	C91-1309-05	CAP. CERAMIC	0.01	10%	500V
C207	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C208	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C209	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C210	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C211	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C212	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C221	C91-2585-05	CAP. MYLAR	0.01	10%	250V
C222	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C301	CE04EW2E470M	CAP. ELECTRO	47	20%	250V
C302	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C303	CE04EW1C472M	CAP. ELECTRO	4700	20%	16V
C304	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C305	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C306	CE04EW1C472M	CAP. ELECTRO	4700	20%	16V
C307	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C308	CE04HW1H010M	CAP. ELECTRO	1	20%	50V
C309	CE04LW1A330M	CAP. ELECTRO	33	20%	10V
C310	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C311	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C331	CE04EW2C221M	CAP. ELECTRO	220	20%	160V
C332	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C402	CE04LW1C470M	CAP. ELECTRO	47	20%	16V
C403	CE04EW1V221M	CAP. ELECTRO	220	20%	35V
C404	NO USE				
C405	C91-2663-05	CAP. FILM	4700P	5%	2KV
C406	C91-2663-05	CAP. FILM	4700P	5%	2KV
C407	CK45E3D472P	CAP. CERAMIC	4700P		2KV
C408	CK45FB2H102K	CAP. CERAMIC	1000P	10%	500V
C409	CK45E3D102P	CAP. CERAMIC	1000P		2KV
C410	C91-2585-05	CAP. MYLAR	0.01	10%	250V
C411	C91-2663-05	CAP. FILM	4700P	5%	2KV
C412	C91-2663-05	CAP. FILM	4700P	5%	2KV
C413	CE04LW2C3R3M	CAP. ELECTRO	3.3	20%	160V
C414	NO USE				
C415	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C416	NO USE				
C417	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C418	CK45FB1H102K	CAP. CERAMIC	1000P	10%	50V
C419	NO USE				
C420	CK45FF1H103Z	CAP. CERAMIC	0.01	10%	50V
C421	NO USE				
C422	CE04LW1C101M	CAP. ELECTRO	100	20%	16V

REF.NO	PARTS NO	NAME & DESCRIPTION			
C423	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
C461	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C501	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
C502	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
CN101	E40-5066-05	PIN CONNECTOR	9P		
CN102	E40-5066-05	PIN CONNECTOR	9P		
CN151	E40-3237-05	PIN CONNECTOR	2P		
CN301	E40-5068-05	PIN CONNECTOR	11P		
CN351	E40-3237-05	PIN CONNECTOR	2P		
CN402	E40-3237-05	PIN CONNECTOR	2P		
CN403	E40-3301-05	PIN CONNECTOR	4P		
CN503	E40-3238-05	PIN CONNECTOR	3P		
CN504	E40-3238-05	PIN CONNECTOR	3P		
CN551	E40-3239-05	PIN CONNECTOR	4P		
CN556	E40-3237-05	PIN CONNECTOR	2P		
D101	1SS133	DIODE			
D102	1SS133	DIODE			
D103	1SS133	DIODE			
D104	1SS133	DIODE			
D105	1SS133	DIODE			
D106	1SS133	DIODE			
D107	1SS133	DIODE			
D108	1SS133	DIODE			
D201	1SS83	DIODE			
D202	MA700	DIODE			
D203	1SS133	DIODE			
D204	1SS83	DIODE			
D301	1SS133	DIODE			
D302	NO USE				
D303	MTZ10JC	DIODE,ZENER			
D304	MTZ10JC	DIODE,ZENER			
D305	MTZ5.1JB	DIODE,ZENER			
D306	NO USE				
D307	1G4B-42	DIODE,BRIDGE			
D308	S2VB20F	DIODE,BRIDGE			
D309	1G4B-42	DIODE,BRIDGE			
D310	1SS133	DIODE			
D401	1SS133	DIODE			
D402	NO USE				
D403	DHM3FJ60	DIODE			
D404	1SS83	DIODE			
D405	1SS83	DIODE			
D406	1SS83	DIODE			
D407	1SS83	DIODE			
D408	1SS133	DIODE			
D409	1SS133	DIODE			
D410	1SS133	DIODE			
D411	1SS133	DIODE			
F401	F53-0107-05	THERMAL FUSE			
IC301	NJM4558D	IC,DUAL OP-AMP			
IC302	NJM4558D	IC,DUAL OP-AMP			
IC303	TA78L005AP	IC,3-TERMINAL REGULATOR			
L401	L40-1011-50	FERRI INDUCTOR	100UH		
L402	L40-1011-50	FERRI INDUCTOR	100UH		
L403	L40-1025-49	FERRI INDUCTOR	1MH		
NL401	RA-201P-V6-2A	NEON LAMP			
P1	E23-1520-05	EARTH TERMINAL			
P2	E23-1520-05	EARTH TERMINAL			
P3	E23-1520-05	EARTH TERMINAL			
P4	E23-1520-05	EARTH TERMINAL			
P5	E23-1520-05	EARTH TERMINAL			
P6	E23-1520-05	EARTH TERMINAL			
PL101	B30-0952-05	LAMP (T4.2 8V 0.15A)			
PL102	B30-0952-05	LAMP (T4.2 8V 0.15A)			
PL103	B30-0952-05	LAMP (T4.2 8V 0.15A)			
Q101	2SC1740S(R,S)	TR. SI, NPN			
Q102	2SA1459(K)	TR. SI, PNP			
Q103	2SA1459(K)	TR. SI, PNP			
Q104	2SC1907	TR. SI, NPN			
Q105	2SC1907	TR. SI, NPN			
Q106	2SA1459(K)	TR. SI, PNP			
Q107	2SA1459(K)	TR. SI, PNP			
Q108	2SC1907	TR. SI, NPN			
Q109	2SC1907	TR. SI, NPN			
Q110	2SA1360(Y)	TR. SI, PNP			

REF.NO	PARTS NO	NAME & DESCRIPTION			
Q111	2SA1360(Y)	TR. SI, PNP			
Q112	2SC3787(S)	TR. SI, NPN			
Q113	2SC3787(S)	TR. SI, NPN			
Q201	2SC1740S(R,S)	TR. SI, NPN			
Q202	2SA933ASLN(R,S)	TR. SI, PNP			
Q203	2SK583	FET, N-CHANNEL			
Q204	2SK583	FET, N-CHANNEL			
Q205	2SA1005(K)	TR. SI, PNP			
Q206	2SA1005(K)	TR. SI, PNP			
Q207	2SA1209(R,S)	TR. SI, PNP			
Q208	2SA1209(R,S)	TR. SI, PNP			
Q209	2SC1923(O)	TR. SI, NPN			
Q210	2SC1923(O)	TR. SI, NPN			
Q211	2SC2911(S)	TR. SI, NPN			
Q212	2SC2911(S)	TR. SI, NPN			
Q213	NO USE				
Q214	2SA933ASLN(R,S)	TR. SI, PNP			
Q215	2SA933ASLN(R,S)	TR. SI, PNP			
Q301	2SA1381(D)	TR. SI, PNP			
Q302	2SC2909(S)	TR. SI, NPN			
Q303	2SB1015(Y)	TR. SI, PNP			
Q304	NO USE				
Q305	2SD1406(Y)	TR. SI, NPN			
Q306	2SA1381(D)	TR. SI, PNP			
Q307	2SC2909(S)	TR. SI, NPN			
Q351	2SC3940A(R)	TR. SI, NPN			
Q352	2SA1534A(R)	TR. SI, PNP			
Q401	2SD1666(R)	TR. SI, NPN			
Q402	2SA933ASLN(R,S)	TR. SI, PNP			
Q403	2SC1740S(R,S)	TR. SI, NPN			
Q404	2SA933ASLN(R,S)	TR. SI, PNP			
Q405	2SA1091(O)	TR. SI, PNP			
Q406	2SA1091(O)	TR. SI, PNP			
Q407	2SA1091(O)	TR. SI, PNP			
Q408	NO USE				
Q409	2SA1208(S)	TR. SI, PNP			
Q410	2SC2910(S)	TR. SI, NPN			
Q411	2SA933ASLN(R,S)	TR. SI, PNP			
Q421	2SC1740S(R,S)	TR. SI, NPN			
Q422	2SC1740S(R,S)	TR. SI, NPN			
R101	RN14BK2C6200F	RES. METAL FILM	620	1%	1/6W
R102	RN14BK2C6200F	RES. METAL FILM	620	1%	1/6W
R103	NO USE				
R104	RN14BK2C1201F	RES. METAL FILM	1.2K	1%	1/6W
R105	RN14BK2C1201F	RES. METAL FILM	1.2K	1%	1/6W
R106	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R107	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R108	RN14BK2C6200F	RES. METAL FILM	620	1%	1/6W
R109	RN14BK2C9100F	RES. METAL FILM	910	1%	1/6W
R110	RN14BK2C9100F	RES. METAL FILM	910	1%	1/6W
R111	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R112	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R113	RN14BK2C1801F	RES. METAL FILM	1.8K	1%	1/6W
R114	RN14BK2C1801F	RES. METAL FILM	1.8K	1%	1/6W
R115	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R116	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R117	NO USE				
R118	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R119	RD14BB2C301J	RES. CARBON	300	5%	1/6W
R120	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R121	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R122	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R123	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R124	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R125	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R126	R92-1676-05	RES. METAL FILM	12K	5%	1W
R127	RD14BB2E361J	RES. CARBON	360	5%	1/4W
R132	R92-1676-05	RES. METAL FILM	12K	5%	1W
R133	RD14BB2E361J	RES. CARBON	360	5%	1/4W
R138	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R139	RD14BB2C124J	RES. CARBON	120K	5%	1/6W
R140	NO USE				
R141	RD14BB2E680J	RES. CARBON	68	5%	1/4W
R142	RD14BB2E680J	RES. CARBON	68	5%	1/4W
R146	R92-1675-05	RES. METAL FILM	10K	5%	1W
R150	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R151	RD14BB2C124J	RES. CARBON	120K	5%	1/6W
R152	RD14BB2E680J	RES. CARBON	68	5%	1/4W
R153	RD14BB2E680J	RES. CARBON	68	5%	1/4W
R158	R92-1675-05	RES. METAL FILM	10K	5%	1W
R162	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R163	RN14BK2C47R0F	RES. METAL FILM	47	1%	1/6W
R164	RN14BK2C47R0F	RES. METAL FILM	47	1%	1/6W
R165	RN14BK2C2002F	RES. METAL FILM	20K	1%	1/6W

REF.NO	PARTS NO	NAME & DESCRIPTION			
R166	RN14BK2C2002F	RES. METAL FILM	20K	1%	1/6W
R167	NO USE				
R168	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R169	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R170	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R171	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R172	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R173	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R174	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R201	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R202	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R203	NO USE				
R204	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R205	RD14BB2C304J	RES. CARBON	300K	5%	1/6W
R206	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R207	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R208	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R209	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R210	RD14BB2C132J	RES. CARBON	1.3K	5%	1/6W
R211	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R212	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R213	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R214	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R215	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R216	RN14BK2E3902F	RES. METAL FILM	39K	1%	1/4W
R217	RN14BK2E4302F	RES. METAL FILM	43K	1%	1/4W
R218	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R219	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R220	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R221	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R222	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R223	RD14BB2C242J	RES. CARBON	2.4K	5%	1/6W
R224	R92-1653-05	RES. METAL FILM	27K	5%	2W
R225	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R226	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R227	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R228	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R229	RN14BK2E3902F	RES. METAL FILM	39K	1%	1/4W
R230	RN14BK2E4302F	RES. METAL FILM	43K	1%	1/4W
R231	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R232	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R233	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R234	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R235	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R236	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R237	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R238	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R239	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R240	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R241	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R242	NO USE				
R243	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R244	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R245	NO USE				
R246	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R247	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R248	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R249	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R254	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R255	RD14BB2C683J	RES. CARBON	68K	5%	1/6W
R301	RS14KB3F272J	RES. METAL FILM	2.7K	5%	3W
R302	RN14BK2E8202F	RES. METAL FILM	82K	1%	1/4W
R303	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R304	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R305	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R306	RN14BK2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R307	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R308	RS14KB3F220J	RES. METAL FILM	22	5%	3W
R309	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R310	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
R311	RN14BK2E1002F	RES. METAL FILM	10K	1%	1/4W
R312	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R317	RS14KB3F330J	RES. METAL FILM	33	5%	3W
R318	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R319	RD14BB2C242J	RES. CARBON	2.4K	5%	1/6W
R320	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R321	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R322	RN14BK2C6201F	RES. METAL FILM	6.2K	1%	1/6W
R323	NO USE				
R324	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R325	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R331	R92-1690-05	RES. METAL FILM	750	5%	3W
R332	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R333	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R334	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R335	RN14BK2E2203F	RES. METAL FILM	220K	1%	1/4W
R336	RN14BK2E2202F	RES. METAL FILM	22K	1%	1/4W
R337	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R351	RD14BB2C120J	RES. CARBON	12	5%	1/6W

REF.NO	PARTS NO	NAME & DESCRIPTION			
R401	RD14BB2C2R2J	RES. CARBON	2.2	5%	1/6W
R402	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R403	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R404	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R405	RD14BB2C334J	RES. CARBON	330K	5%	1/6W
R406	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R407	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R408	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R409	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R410	NO USE				
R411	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R412	NO USE				
R413	R92-1564-05	RES. METAL FILM	15M	1%	1/2W
R419	RN14BK2C1603F	RES. METAL FILM	160K	1%	1/6W
R420	RN14BK2C1603F	RES. METAL FILM	160K	1%	1/6W
R421	R92-1674-05	RES. METAL FILM	7.5M	5%	1/4W
R427	RD14BB2E515J	RES. CARBON	5.1M	5%	1/4W
R428	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R429	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R430	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R431	RN14BK2E3904F	RES. METAL FILM	3.9M	1%	1/4W
R432	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R433	RD14BB2C513J	RES. CARBON	51K	5%	1/6W
R434	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R435	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R436	RD14BB2E683J	RES. CARBON	68K	5%	1/4W
R437	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R438	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R439	RD14BB2C164J	RES. CARBON	160K	5%	1/6W
R440	RD14BB2C753J	RES. CARBON	75K	5%	1/6W
R441	RD14BB2C823J	RES. CARBON	82K	5%	1/6W
R442	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R443	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R444	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R445	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R446	R92-1061-05	JUMPING RES	ZERO OHM(5MM)		
R447	RD14BB2E272J	RES. CARBON	2.7K	5%	1/4W
R448	RD14BB2C434J	RES. CARBON	430K	5%	1/6W
R449	RD14BB2C914J	RES. CARBON	910K	5%	1/6W
R450	R92-1674-05	RES. METAL FILM	7.5M	5%	1/4W
R451	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R452	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R453	RD14BB2E242J	RES. CARBON	2.4K	5%	1/4W
R461	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R462	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
T1	L19-0428-05	CONVERTOR TRANSFORMER			
TC101	C05-0470-05	CAP. TRIMMER	20P		
VR101	R12-0871-05	RES. SEMI FIXED	470 B		
VR102	R12-0869-05	RES. SEMI FIXED	100 B		
VR103	R12-0869-05	RES. SEMI FIXED	100 B		
VR201	R12-1590-05	RES. SEMI FIXED	2.2KB		
VR202	R12-0869-05	RES. SEMI FIXED	100 B		
VR203	R12-1591-05	RES. SEMI FIXED	4.7K		
VR301	R12-1589-05	RES. SEMI FIXED	1KB		
VR401	R12-8525-05	RES. SEMI FIXED	1MB		
VR402	R12-5560-05	RES. SEMI FIXED	100KB		
VR403	R12-5560-05	RES. SEMI FIXED	100KB		
W103	E38-1280-05	WIRE ASS'Y;Y-CRT			
W401	E38-1155-05	WIRE ASS'Y;HIGH VOLTAGE			

CS-4125 (~S/NO.7121000) SWEEP UNIT

X74-1600-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	J73-0361-02	PCB (UNMOUNTED)			
C1	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C2	CE04CW1A101M	CAP. ELECTRO	100	20%	10V
C3	CE04CW1E101M	CAP. ELECTRO	100	20%	25V
C401	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C402	CE04LW1A220M	CAP. ELECTRO	22	20%	10V
C403	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C406	C91-2538-05	CAP. FILM	0.1	10%	63V
C407	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C408	CC45FSL1H121J	CAP. CERAMIC	120P	5%	50V
C409	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C410	NO USE				
C411	CC45FSL1H220J	CAP. CERAMIC	22P	5%	50V
C412	CE04LW1H2R2M	CAP. ELECTRO	2.2	20%	50V
C413	CK45FB1H472K	CAP. CERAMIC	4700P	10%	50V
C414	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C415	CC45FSL1H560J	CAP. CERAMIC	56P	5%	50V
C416	NO USE				
C417	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C418	CK45FB1H222K	CAP. CERAMIC	2200P	10%	50V
C419	CC45FSL1H331J	CAP. CERAMIC	330P	5%	50V
C420	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C421	CC45FSL1H471J	CAP. CERAMIC	470P	5%	50V
C422	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C423	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C424	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C425	C91-2538-05	CAP. FILM	0.1	10%	63V
C426	C91-2538-05	CAP. FILM	0.1	10%	63V
C427	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C428	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C429	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C430	C91-2538-05	CAP. FILM	0.1	10%	63V
C431	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C432	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C433	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C434	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C435	CC45FCH1H470J	CAP. CERAMIC	47P	5%	50V
C438	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C439	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C440	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C504	CE04CW1C101M	CAP. ELECTRO	100	20%	16V
C505	CE04CW1C220M	CAP. ELECTRO	22	20%	16V
C601	CC45FCH2H010C	CAP. CERAMIC	1P	0.25P	500V
C602	CC45FCH2H010C	CAP. CERAMIC	1P	0.25P	500V
C603	CK45FB2H472K	CAP. CERAMIC	4700P	10%	500V
CN1	E40-5278-05	PIN CONNECTOR	17P		
CN2	E40-5278-05	PIN CONNECTOR	17P		
CN3	E40-5278-05	PIN CONNECTOR	17P		
CN4	E40-0218-05	PIN CONNECTOR	2P		
CN51	E40-7512-05	PIN CONNECTOR	15P		
CN52	E40-7512-05	PIN CONNECTOR	15P		
CN53	E40-7512-05	PIN CONNECTOR	15P		
CN54	E40-7519-05	PIN CONNECTOR	4P		
CN103	E40-3301-05	PIN CONNECTOR	4P		
CN401	E40-3303-05	PIN CONNECTOR	6P		
CN501	E40-7420-05	PIN CONNECTOR	4P		
CN601	E01-0103-05	CRT SOCKET			
CP401	R90-0286-05	RES. NETWORK	4X4.7K		
D1	1SS133	DIODE			
D2	1SS133	DIODE			
D3	1SS133	DIODE			
D401	1SS133	DIODE			
D402	1SS133	DIODE			
D403	1SS133	DIODE			
D404	1SS133	DIODE			
D405	NO USE				
D406	1SS133	DIODE			
D407	1SS133	DIODE			
D408	NO USE				
D409	1SS133	DIODE			
D410	1SS133	DIODE			
D411	1SS133	DIODE			
D412	1SS133	DIODE			
D413	1SS133	DIODE			
D414	1SS133	DIODE			
D415	1SS133	DIODE			
D416	1SS133	DIODE			

REF.NO	PARTS NO	NAME & DESCRIPTION			
D417	1SS133	DIODE			
D418	MA700	DIODE			
IC1	NJM4558D	IC,DUAL OP-AMP			
IC401	SN74LS74AN	IC,D-FLIP FLOP			
IC402	SN74LS86AN	IC,QUAD 2 INPUT EX-OR GATE			
IC403	SN74LS51N	IC,2W 3-IN/2-IN & OR INV. GATE			
IC404	SN74LS51N	IC,2W 3-IN/2-IN & OR INV. GATE			
IC405	SN74LS00N	IC,QUAD 2-INPUT NAND GATE			
IC406	SN74LS00N	IC,QUAD 2-INPUT NAND GATE			
IC407	TC4052BP	IC,DIFFERENTIAL 4CH MPX/DE-MPX			
IC408	TC4052BP	IC,DIFFERENTIAL 4CH MPX/DE-MPX			
IC409	LF412CN	IC,DUAL JFET INPUT OP AMP			
IC410	NJM4558D	IC,DUAL OP-AMP			
J5	E04-0291-05	BNC RECEPTACLE			
L601	L40-4791-17	FERRI INDUCTOR	4.7UH		
L602	L40-4791-17	FERRI INDUCTOR	4.7UH		
Q1	2SC1740S(R,S)	TR. SI, NPN			
Q402	2SC1740S(R,S)	TR. SI, NPN			
Q403	2SC1740S(R,S)	TR. SI, NPN			
Q404	2SC1740S(R,S)	TR. SI, NPN			
Q405	2SC1740S(R,S)	TR. SI, NPN			
Q406	2SC4049	TR. SI, NPN			
Q407	2SC4049	TR. SI, NPN			
Q408	2SC1740S(R,S)	TR. SI, NPN			
Q409	2SA933S(R,S)	TR. SI, PNP			
Q410	2SA933S(R,S)	TR. SI, PNP			
Q411	2SA933S(R,S)	TR. SI, PNP			
Q412	2SC1740S(R,S)	TR. SI, NPN			
Q416	2SA933S(R,S)	TR. SI, PNP			
Q417	2SA933S(R,S)	TR. SI, PNP			
Q418	2SC4049	TR. SI, NPN			
Q419	2SC1740S(R,S)	TR. SI, NPN			
Q420	2SC1923(0)	TR. SI, NPN			
Q421	2SC1923(0)	TR. SI, NPN			
Q422	2SC4049	TR. SI, NPN			
Q423	2SA1005(K)	TR. SI, PNP			
Q424	2SC1740S(R,S)	TR. SI, NPN			
Q425	2SA933S(R,S)	TR. SI, PNP			
Q426	2SC1740S(R,S)	TR. SI, NPN			
Q427	2SC3732(L)	TR. SI, NPN			
Q428	2SA933S(R,S)	TR. SI, PNP			
Q429	2SC1740S(R,S)	TR. SI, NPN			
Q430	2SC1740S(R,S)	TR. SI, NPN			
Q431	2SC4049	TR. SI, NPN			
Q432	2SC1740S(R,S)	TR. SI, NPN			
Q433	2SA1174(E,F)	TR. SI, PNP			
Q434	2SC1740S(R,S)	TR. SI, NPN			
Q501	2SC1923(0)	TR. SI, NPN			
Q502	2SC1740S(R,S)	TR. SI, NPN			
R1	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R2	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R3	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R4	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R5	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R6	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R7	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R8	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R9	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R10	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R11	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R12	RN14BK2C8201F	RES. METAL FILM	8.2K	1%	1/6W
R13	RN14BK2C7501F	RES. METAL FILM	7.5K	1%	1/6W
R14	RD14BB2C121J	RES. CARBON	120	5%	1/6W
R32	RN14BK2C3902F	RES. METAL FILM	39K	1%	1/6W
R33	RN14BK2C3902F	RES. METAL FILM	39K	1%	1/6W
R34	RN14BK2C4702F	RES. METAL FILM	47K	1%	1/6W
R35	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R36	RN14BK2C3001F	RES. METAL FILM	3K	1%	1/6W
R37	RN14BK2C4701F	RES. METAL FILM	4.7K	1%	1/6W
R38	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R39	RN14BK2C2200F	RES. METAL FILM	220	1%	1/6W
R71	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R79	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R80	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R102	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R401	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R402	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R403	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R404	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R405	R92-1061-05	JUMPING RES.	ZERO OHM (5MM)		
R406	R92-1061-05	JUMPING RES.	ZERO OHM (5MM)		
R407	NO USE				

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
R408	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R409	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R410	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R411	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R412	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R413	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R414	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R415	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R416	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R417	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R418	NO USE				
R419	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R420	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R421	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R422	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
R423	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R424	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R425	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R426	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R427	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R428	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R429	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R430	RN14BK2C1102F	RES. METAL FILM	11K	1%	1/6W
R434	RD14BB2C474J	RES. CARBON	470K	5%	1/6W
R435	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R436	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R437	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R438	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R439	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R440	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R441	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R442	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R443	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R444	RD14BB2C181J	RES. CARBON	180	5%	1/6W
R445	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R446	RD14BB2C393J	RES. CARBON	39K	5%	1/6W
R447	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R448	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R449	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R450	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R451	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R452	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R453	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R454	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R455	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R456	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R459	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R460	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R461	RD14BB2C302J	RES. CARBON	3K	5%	1/6W
R462	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R463	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R464	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R465	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R466	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R467	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R468	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R469	RN14BK2C1041D	RES. METAL FILM	1.04K	0.5%	1/6W
R470	RN14BK2C1301D	RES. METAL FILM	1.3K	0.5%	1/6W
R471	RN14BK2C1671D	RES. METAL FILM	1.67K	0.5%	1/6W
R472	RN14BK2C1002D	RES. METAL FILM	10K	0.5%	1/6W
R473	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R474	RN14BK2C6800D	RES. METAL FILM	680	0.5%	1/6W
R475	RN14BK2C6802D	RES. METAL FILM	68K	0.5%	1/6W
R476	RN14BK2C6801D	RES. METAL FILM	6.8K	0.5%	1/6W
R477	RN14BK2E6803D	RES. METAL FILM	680K	0.5%	1/4W
R478	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R479	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R480	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R481	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R482	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R483	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R484	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R485	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R490	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R491	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R492	RD14BB2C132J	RES. CARBON	1.3K	5%	1/6W
R493	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R494	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R505	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R506	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R507	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R508	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R509	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R510	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R511	R92-0150-05	JUMPING RES.	ZERO OHM(10MM)		
R601	RD14BB2C511J	RES. CARBON	510	5%	1/6W
R602	RD14BB2C511J	RES. CARBON	510	5%	1/6W
R603	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R604	RD14BB2C104J	RES. CARBON	100K	5%	1/6W

REF.NO	PARTS NO	NAME & DESCRIPTION	
S1	S60-0618-05	ROTARY SWITCH	
S2	S60-0618-05	ROTARY SWITCH	
S3	S60-0617-05	ROTARY SWITCH	
S4	S68-0643-05	PUSH SWITCH	
S5	S68-0643-05	PUSH SWITCH	
S6	S68-0643-05	PUSH SWITCH	
S7	S68-0643-05	PUSH SWITCH	
S8	S64-0605-05	LEVER SWITCH	
S9	S64-0605-05	LEVER SWITCH	
S10	S64-0605-05	LEVER SWITCH	
S101	S68-0642-05	PUSH SWITCH	
VR1	R05-3522-05	V.R.	10KB
VR2	R05-3522-05	V.R.	10KB
VR3	R05-3524-05	V.R.	10KB
VR4	R05-3522-05	V.R.	10KB
VR5	R05-3523-05	V.R.	10KB
VR6	R05-3523-05	V.R.	10KB
VR7	R05-3523-05	V.R.	10KB
VR8	NO USE		
VR9	R05-3522-05	V.R.	10KB
VR10	R05-3522-05	V.R.	10KB
VR11	R31-0805-05	V.R.	50K
VR401	R12-0876-05	RES. SEMI FIXED 470 B	
W551	E38-1157-05	WIRE ASS'Y;X-CRT	
W554	E38-1158-05	WIRE ASS'Y;CH1 OUT	
W559	E38-1190-05	WIRE ASS'Y;CH SW	
W560	NO USE		
W561	E38-1191-05	WIRE ASS'Y;SWP END	
W901	E38-1192-05	WIRE ASS'Y;GND X2	

CS-4125 SWEEP UNIT

X74-1610-01

REF.NO	PARTS NO	NAME & DESCRIPTION			
	E38-1451-05	WIRE ASS'Y;G			
	J73-0415-12	PCB (UNMOUNTED)			
C1	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C2	CE04CW1A101M	CAP. ELECTRO	100	20%	10V
C3	CE04CW1E101M	CAP. ELECTRO	100	20%	25V
C401	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C402	CE04LW1H2R2M	CAP. ELECTRO	2.2	20%	50V
C403	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C406	C91-2538-05	CAP. FILM	0.1	10%	63V
C407	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C408	CC45FSL1H121J	CAP. CERAMIC	120P	5%	50V
C411	CC45FSL1H220J	CAP. CERAMIC	22P	5%	50V
C412	CE04LW1H2R2M	CAP. ELECTRO	2.2	20%	50V
C413	CK45FB1H472K	CAP. CERAMIC	4700P	10%	50V
C414	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C415	CC45FSL1H470J	CAP. CERAMIC	47P	5%	50V
C416	NO USE				
C417	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C418	CK45FB1H222K	CAP. CERAMIC	2200P	10%	50V
C419	CC45FSL1H331J	CAP. CERAMIC	330P	5%	50V
C420	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C421	CC45FSL1H471J	CAP. CERAMIC	470P	5%	50V
C422	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C423	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C424	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C425	C91-2538-05	CAP. FILM	0.1	10%	63V
C426	C91-2538-05	CAP. FILM	0.1	10%	63V
C427	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C428	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C429	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C430	C91-2538-05	CAP. FILM	0.1	10%	63V
C431	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C432	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C433	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C434	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C435	CC45FCH1H470J	CAP. CERAMIC	47P	5%	50V
C436	C91-2538-05	CAP. FILM	0.1	10%	63V
C437	CC45FSL1H150J	CAP. CERAMIC	15P	5%	50V
C438	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C439	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C440	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C450	CC45FSL1H330J	CAP. CERAMIC	33P	5%	50V
C457	CE04EW1A101M	CAP. ELECTRO	100	20%	10V
C458	NO USE				
C459	CE04LW1A221M	CAP. ELECTRO	220	20%	10V

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
C504	CE04CW1C101M	CAP. ELECTRO	100	20%	16V
C505	CE04CW1C220M	CAP. ELECTRO	22	20%	16V
C551	CC45FCH1H030C	CAP. CERAMIC	3P	0.25P	50V
CN4	E40-0218-05	PIN CONNECTOR	2P		
CN51	E40-7512-05	PIN CONNECTOR	15P		
CN52	E40-7550-05	PIN CONNECTOR	7P		
CN53	E40-7550-05	PIN CONNECTOR	7P		
CN103	E40-3301-05	PIN CONNECTOR	4P		
CN205	E40-7568-05	PIN CONNECTOR	9P		
CN206	E40-7566-05	PIN CONNECTOR	5P		
CN209	E40-7565-05	PIN CONNECTOR	3P		
CN404	E40-3239-05	PIN CONNECTOR	4P		
CN491	E40-3304-05	PIN CONNECTOR	7P		
CN501	E40-7420-05	PIN CONNECTOR	4P		
CN601	E01-0103-05	CRT SOCKET			
CP401	R90-0286-05	RES. NETWORK	4X4.7K		
CP402	R90-0645-05	RES. NETWORK	4X10K		
CP403	R90-0653-05	RES. NETWORK	8X10K		
D1	1SS133	DIODE			
D2	1SS133	DIODE			
D3	1SS133	DIODE			
D401	1SS133	DIODE			
D402	1SS133	DIODE			
D403	1SS133	DIODE			
D404	1SS133	DIODE			
D405	NO USE				
D406	1SS133	DIODE			
D407	1SS133	DIODE			
D408	NO USE				
D409	1SS133	DIODE			
D410	1SS133	DIODE			
D411	1SS133	DIODE			
D412	1SS133	DIODE			
D413	1SS133	DIODE			
D414	1SS133	DIODE			
D415	1SS133	DIODE			
D416	1SS133	DIODE			
D417	1SS133	DIODE			
D418	MA700	DIODE			
D419	1SS133	DIODE			
D420	1SS133	DIODE			
IC1	NJM4558D	IC,DUAL OP-AMP			
IC401	SN74LS74AN	IC,D-FLIP FLOP			
IC402	SN74LS86AN	IC,QUAD 2 INPUT EX-OR GATE			
IC403	SN74LS51N	IC,2W 3-IN/2-IN & OR INV. GATE			
IC404	SN74LS51N	IC,2W 3-IN/2-IN & OR INV. GATE			
IC405	SN74LS00N	IC,QUAD 2-INPUT NAND GATE			
IC406	SN74LS00N	IC,QUAD 2-INPUT NAND GATE			
IC407	TC4052BP	IC,DIFFERENTIAL 4CH MPX/DE-MPX			
IC408	TC4052BP	IC,DIFFERENTIAL 4CH MPX/DE-MPX			
IC409	LF412CN	IC,DUAL JFET INPUT OP AMP			
IC410	NJM4558D	IC,DUAL OP-AMP			
J5	E04-0291-05	BNC RECEPTACLE			
L401	L40-1011-50	FERRI INDUCTOR	100UH		
L601	L40-4791-17	FERRI INDUCTOR	4.7UH		
L602	L40-4791-17	FERRI INDUCTOR	4.7UH		
NL1	RA-201P-V6-2A	NEON LAMP			
Q1	2SC1740S(R,S)	TR. SI, NPN			
Q402	2SC1740S(R,S)	TR. SI, NPN			
Q403	2SC1740S(R,S)	TR. SI, NPN			
Q404	2SC1740S(R,S)	TR. SI, NPN			
Q405	2SC1740S(R,S)	TR. SI, NPN			
Q406	DTC114Y(S)	TR. SI, NPN			
Q407	DTC114Y(S)	TR. SI, NPN			
Q408	2SC1740S(R,S)	TR. SI, NPN			
Q409	2SA933ASLN(R,S)	TR. SI, PNP			
Q410	2SA933ASLN(R,S)	TR. SI, PNP			
Q411	2SA933ASLN(R,S)	TR. SI, PNP			
Q412	2SC1740S(R,S)	TR. SI, NPN			
Q416	2SA933ASLN(R,S)	TR. SI, PNP			
Q417	2SA933ASLN(R,S)	TR. SI, PNP			
Q418	DTC114Y(S)	TR. SI, NPN			
Q419	2SC1740S(R,S)	TR. SI, NPN			

REF.NO	PARTS NO	NAME & DESCRIPTION			
Q420	2SC1906	TR. SI, NPN			
Q421	2SC1906	TR. SI, NPN			
Q422	DTC114Y(S)	TR. SI, NPN			
Q423	2SA1005(K)	TR. SI, PNP			
Q424	2SC1740S(R,S)	TR. SI, NPN			
Q425	2SA933ASLN(R,S)	TR. SI, PNP			
Q426	2SC1740S(R,S)	TR. SI, NPN			
Q427	2SC3732(L)	TR. SI, NPN			
Q428	2SA933ASLN(R,S)	TR. SI, PNP			
Q429	2SC1740S(R,S)	TR. SI, NPN			
Q430	2SC1740S(R,S)	TR. SI, NPN			
Q431	DTC114Y(S)	TR. SI, NPN			
Q432	2SC1740S(R,S)	TR. SI, NPN			
Q433	2SA1174(E,F)	TR. SI, PNP			
Q434	2SC1740S(R,S)	TR. SI, NPN			
Q501	2SC1906	TR. SI, NPN			
Q502	2SC1740S(R,S)	TR. SI, NPN			
R1	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R2	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R3	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R4	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R5	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R6	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R7	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R8	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R9	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R10	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R11	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R12	RN14BK2C8201F	RES. METAL FILM	8.2K	1%	1/6W
R13	RN14BK2C7501F	RES. METAL FILM	7.5K	1%	1/6W
R14	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R32	RN14BK2C3902F	RES. METAL FILM	39K	1%	1/6W
R33	RN14BK2C3902F	RES. METAL FILM	39K	1%	1/6W
R34	RN14BK2C4702F	RES. METAL FILM	47K	1%	1/6W
R35	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R36	RN14BK2C3001F	RES. METAL FILM	3K	1%	1/6W
R37	RN14BK2C4700F	RES. METAL FILM	470	1%	1/6W
R38	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R39	RN14BK2C2200F	RES. METAL FILM	220	1%	1/6W
R71	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R79	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R80	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R102	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R105	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R401	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R402	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R403	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R404	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R405	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R406	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R407	NO USE				
R408	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R409	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R410	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R411	RD14BB2E512J	RES. CARBON	5.1K	5%	1/4W
R412	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R413	RD14BB2C132J	RES. CARBON	1.3K	5%	1/6W
R414	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R415	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R416	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R417	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R418	NO USE				
R419	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R420	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R421	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R422	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
R423	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R424	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R425	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R426	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R427	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R428	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R429	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R430	RN14BK2C1102F	RES. METAL FILM	11K	1%	1/6W
R431	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R434	RD14BB2C474J	RES. CARBON	470K	5%	1/6W
R435	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R436	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R437	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R438	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R439	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R440	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R441	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R442	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R443	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R444	RD14BB2C181J	RES. CARBON	180	5%	1/6W
R445	RD14BB2C103J	RES. CARBON	10K	5%	1/6W

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
R446	RD14BB2C393J	RES. CARBON	39K	5%	1/6W
R447	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R448	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R449	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R450	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R451	RD14BB2C681J	RES. CARBON	680	5%	1/6W
R452	RD14BB2C271J	RES. CARBON	270	5%	1/6W
R453	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R454	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R455	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R456	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R457	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R460	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R461	RD14BB2C302J	RES. CARBON	3K	5%	1/6W
R462	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R463	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R464	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R465	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R466	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R467	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R468	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R469	RN14BK2C1041D	RES. METAL FILM	1.04K	0.5%	1/6W
R470	RN14BK2C1301D	RES. METAL FILM	1.3K	0.5%	1/6W
R471	RN14BK2C1671D	RES. METAL FILM	1.67K	0.5%	1/6W
R472	RN14BK2C1002D	RES. METAL FILM	10K	0.5%	1/6W
R473	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R474	RN14BK2C6800D	RES. METAL FILM	680	0.5%	1/6W
R475	RN14BK2C6802D	RES. METAL FILM	68K	0.5%	1/6W
R476	RN14BK2C6801D	RES. METAL FILM	6.8K	0.5%	1/6W
R477	RN14BK2E6803D	RES. METAL FILM	680K	0.5%	1/4W
R478	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R479	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R480	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R481	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R482	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R483	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R484	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R485	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R486	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R487	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R488	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R489	NO USE				
R490	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R491	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R492	RD14BB2E132J	RES. CARBON	1.3K	5%	1/4W
R493	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R494	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R495	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R496	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R505	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R506	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R507	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R508	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R509	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R510	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R551	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R601	RD14BB2C511J	RES. CARBON	510	5%	1/6W
R602	RD14BB2C511J	RES. CARBON	510	5%	1/6W
S1	S60-0618-05	ROTARY SWITCH			
S2	S60-0618-05	ROTARY SWITCH			
S3	S60-0617-05	ROTARY SWITCH			
S4	S68-0643-05	PUSH SWITCH			
S5	S68-0643-05	PUSH SWITCH			
S6	S68-0643-05	PUSH SWITCH			
S7	S68-0643-05	PUSH SWITCH			
S8	S64-0605-05	LEVER SWITCH			
S9	S64-0605-05	LEVER SWITCH			
S10	S64-0605-05	LEVER SWITCH			
S101	S68-0642-05	PUSH SWITCH			
VR1	R05-3522-05	V.R.	10KB		
VR2	R05-3522-05	V.R.	10KB		
VR3	R05-3524-05	V.R.	10KB		
VR4	R05-3522-05	V.R.	10KB		
VR5	R05-3523-05	V.R.	10KB		
VR6	R05-3523-05	V.R.	10KB		
VR7	R05-3523-05	V.R.	10KB		
VR8	NO USE				
VR9	R05-3522-05	V.R.	10KB		
VR10	R05-3522-05	V.R.	10KB		
VR11	R31-0805-05	V.R.	50K		
VR401	R12-0567-05	RES. SEMI FIXED 500 B			
W201	E38-1271-05	WIRE ASS'Y			
W202	E38-1272-05	WIRE ASS'Y			
W203	NO USE				
W204	E38-1274-05	WIRE ASS'Y			
W205	E38-1275-05	WIRE ASS'Y;WITH W207			
W206	E38-1276-05	WIRE ASS'Y			

REF.NO	PARTS NO	NAME & DESCRIPTION
W207	NO USE	
W208	E38-1278-05	WIRE ASS'Y
W551	E38-1157-05	WIRE ASS'Y;X-CRT
W554	E38-1158-05	WIRE ASS'Y;CH1 OUT
W559	E38-1190-05	WIRE ASS'Y;CH SW
W560	NO USE	
W561	E38-1191-05	WIRE ASS'Y;SWP END
W901	E38-1192-05	WIRE ASS'Y;GND X2

CS-4135 SWEEP UNIT

X74-1610-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	E38-1451-05	WIRE ASS'Y;G			
	J73-0415-12	PCB (UNMOUNTED)			
C1	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C2	CE04CW1A101M	CAP. ELECTRO	100	20%	10V
C3	CE04CW1E101M	CAP. ELECTRO	100	20%	25V
C101	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C401	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C402	CE04LW1H2R2M	CAP. ELECTRO	2.2	20%	50V
C403	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C406	C91-2538-05	CAP. FILM	0.1	10%	63V
C407	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C408	CC45FSL1H121J	CAP. CERAMIC	120P	5%	50V
C411	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
C412	CE04LW1H2R2M	CAP. ELECTRO	2.2	20%	50V
C413	CK45FB1H472K	CAP. CERAMIC	4700P	10%	50V
C414	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C415	CC45FSL1H270J	CAP. CERAMIC	27P	5%	50V
C416	NO USE				
C417	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C418	CK45FB1H222K	CAP. CERAMIC	2200P	10%	50V
C419	CC45FSL1H331J	CAP. CERAMIC	330P	5%	50V
C420	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C421	CC45FSL1H101J	CAP. CERAMIC	100P	5%	50V
C422	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C423	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C424	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C425	C91-2538-05	CAP. FILM	0.1	10%	63V
C426	C91-2538-05	CAP. FILM	0.1	10%	63V
C427	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C428	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C429	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C430	C91-2538-05	CAP. FILM	0.1	10%	63V
C431	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C432	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C433	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C434	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C435	CC45FCH1H470J	CAP. CERAMIC	47P	5%	50V
C436	C91-2538-05	CAP. FILM	0.1	10%	63V
C437	CC45FSL1H150J	CAP. CERAMIC	15P	5%	50V
C438	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C439	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C440	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C450	CC45FSL1H330J	CAP. CERAMIC	33P	5%	50V
C451	C91-2538-05	CAP. FILM	0.1	10%	63V
C452	CC45FCH1H680J	CAP. CERAMIC	68P	5%	50V
C453	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C454	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C455	CC45FSL1H470J	CAP. CERAMIC	47P	5%	50V
C456	CE04EW0J221M	CAP. ELECTRO	220	20%	6.3V
C457	CE04EW1A101M	CAP. ELECTRO	100	20%	10V
C458	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C459	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C498	CC45FSL1H330J	CAP. CERAMIC	33P	5%	50V
C504	CE04CW1C101M	CAP. ELECTRO	100	20%	16V
C505	CE04CW1C220M	CAP. ELECTRO	22	20%	16V
C551	CC45FCH1H020C	CAP. CERAMIC	2P	0.25P	50V
CN4	E40-0218-05	PIN CONNECTOR	2P		
CN5	E40-3238-05	PIN CONNECTOR	3P		
CN51	E40-7512-05	PIN CONNECTOR	15P		
CN52	E40-7550-05	PIN CONNECTOR	7P		
CN53	E40-7550-05	PIN CONNECTOR	7P		
CN103	E40-3301-05	PIN CONNECTOR	4P		
CN205	E40-7568-05	PIN CONNECTOR	9P		
CN206	E40-7566-05	PIN CONNECTOR	5P		

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
CN209	E40-7565-05	PIN CONNECTOR	3P		
CN401	E40-3303-05	PIN CONNECTOR	6P		
CN404	E40-3239-05	PIN CONNECTOR	4P		
CN501	E40-7420-05	PIN CONNECTOR	4P		
CN601	E01-0103-05	CRT SOCKET			
CP401	R90-0286-05	RES. NETWORK	4X4.7K		
CP402	R90-0645-05	RES. NETWORK	4X10K		
CP403	R90-0653-05	RES. NETWORK	8X10K		
D1	1SS133	DIODE			
D2	1SS133	DIODE			
D3	1SS133	DIODE			
D401	1SS133	DIODE			
D402	1SS133	DIODE			
D403	1SS133	DIODE			
D404	1SS133	DIODE			
D405	NO USE				
D406	1SS133	DIODE			
D407	1SS133	DIODE			
D408	NO USE				
D409	1SS133	DIODE			
D410	1SS133	DIODE			
D411	1SS133	DIODE			
D412	1SS133	DIODE			
D413	1SS133	DIODE			
D414	1SS133	DIODE			
D415	1SS133	DIODE			
D416	1SS133	DIODE			
D417	1SS133	DIODE			
D418	MA700	DIODE			
D419	1SS133	DIODE			
D420	1SS133	DIODE			
D421	MA700	DIODE			
IC1	NJM4558D	IC,DUAL OP-AMP			
IC401	SN74AS74AN	IC,DUAL D-F.F. WITH PR&CLR			
IC402	SN74ALS86N	IC,QUAD 2-EXCLUSIVE-OR GATE			
IC403	SN74LS51N	IC,2W 3-IN/2-IN & OR INV. GATE			
IC404	SN74LS51N	IC,2W 3-IN/2-IN & OR INV. GATE			
IC405	SN74LS00N	IC,QUAD 2-INPUT NAND GATE			
IC406	SN74LS00N	IC,QUAD 2-INPUT NAND GATE			
IC407	TC4052BP	IC,DIFFERENTIAL 4CH MPX/DE-MPX			
IC408	TC4052BP	IC,DIFFERENTIAL 4CH MPX/DE-MPX			
IC409	LF412CN	IC,DUAL JFET INPUT OP AMP			
IC410	NJM4558D	IC,DUAL OP-AMP			
J5	E04-0291-05	BNC RECEPTACLE			
L401	L40-1011-50	FERRI INDUCTOR	100UH		
L601	L40-4781-17	FERRI INDUCTOR	0.47UH		
L602	L40-4781-17	FERRI INDUCTOR	0.47UH		
NL1	RA-201P-V6-2A	NEON LAMP			
Q1	2SC1740S(R,S)	TR. SI, NPN			
Q402	2SC1740S(R,S)	TR. SI, NPN			
Q403	2SC1740S(R,S)	TR. SI, NPN			
Q404	2SC1740S(R,S)	TR. SI, NPN			
Q405	2SC1740S(R,S)	TR. SI, NPN			
Q406	DTC114Y(S)	TR. SI, NPN			
Q407	DTC114Y(S)	TR. SI, NPN			
Q408	2SC1907	TR. SI, NPN			
Q409	2SA1005(K)	TR. SI, PNP			
Q410	2SA933ASLN(R,S)	TR. SI, PNP			
Q411	2SA933ASLN(R,S)	TR. SI, PNP			
Q412	2SC1740S(R,S)	TR. SI, NPN			
Q416	2SA933ASLN(R,S)	TR. SI, PNP			
Q417	2SA933ASLN(R,S)	TR. SI, PNP			
Q418	DTC114Y(S)	TR. SI, NPN			
Q419	2SC1907	TR. SI, NPN			
Q420	2SC1906	TR. SI, NPN			
Q421	2SC1906	TR. SI, NPN			
Q422	DTC114Y(S)	TR. SI, NPN			
Q423	2SA1005(K)	TR. SI, PNP			
Q424	2SC1906	TR. SI, NPN			
Q425	2SA933ASLN(R,S)	TR. SI, PNP			
Q426	2SC1740S(R,S)	TR. SI, NPN			
Q427	2SC3732(L)	TR. SI, NPN			
Q428	2SA933ASLN(R,S)	TR. SI, PNP			
Q429	2SC1740S(R,S)	TR. SI, NPN			
Q430	2SC1740S(R,S)	TR. SI, NPN			
Q431	DTC114Y(S)	TR. SI, NPN			
Q432	2SC1740S(R,S)	TR. SI, NPN			
Q433	2SA1174(E,F)	TR. SI, PNP			
Q434	2SC1906	TR. SI, NPN			
Q435	2SC1906	TR. SI, NPN			

REF.NO	PARTS NO	NAME & DESCRIPTION			
Q501	2SC1906	TR. SI, NPN			
Q502	2SC1740S(R,S)	TR. SI, NPN			
R1	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R2	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R3	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R4	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R5	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R6	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R7	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R8	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R9	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R10	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R11	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R12	RN14BK2C8201F	RES. METAL FILM	8.2K	1%	1/6W
R13	RN14BK2C7501F	RES. METAL FILM	7.5K	1%	1/6W
R14	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R32	RN14BK2C3902F	RES. METAL FILM	39K	1%	1/6W
R33	RN14BK2C3902F	RES. METAL FILM	39K	1%	1/6W
R34	RN14BK2C4702F	RES. METAL FILM	47K	1%	1/6W
R35	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R36	RN14BK2C3001F	RES. METAL FILM	3K	1%	1/6W
R37	RN14BK2C4700F	RES. METAL FILM	470	1%	1/6W
R38	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R39	RN14BK2C2200F	RES. METAL FILM	220	1%	1/6W
R71	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R80	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R101	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R102	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R103	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R106	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R401	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R402	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R403	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R404	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R405	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R406	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R407	NO USE				
R408	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R409	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R410	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R411	RD14BB2E512J	RES. CARBON	5.1K	5%	1/4W
R412	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R413	RD14BB2C132J	RES. CARBON	1.3K	5%	1/6W
R414	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R415	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R416	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R417	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R418	NO USE				
R419	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R420	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R421	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R422	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
R423	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R424	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R425	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R426	RD14BB2C821J	RES. CARBON	820	5%	1/6W
R427	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R428	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R429	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R430	RN14BK2C9101F	RES. METAL FILM	9.1K	1%	1/6W
R431	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R432	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R433	NO USE				
R434	RD14BB2C474J	RES. CARBON	470K	5%	1/6W
R435	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R436	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R437	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R438	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R439	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R440	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R441	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R442	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R443	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R444	RD14BB2C181J	RES. CARBON	180	5%	1/6W
R445	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R446	RD14BB2C393J	RES. CARBON	39K	5%	1/6W
R447	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R448	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R449	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R450	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R451	RD14BB2C681J	RES. CARBON	680	5%	1/6W
R452	RD14BB2C271J	RES. CARBON	270	5%	1/6W
R453	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R454	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R455	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R456	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R457	RD14BB2E220J	RES. CARBON	22	5%	1/4W
R458	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R459	NO USE				

REF.NO	PARTS NO	NAME & DESCRIPTION			
R460	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R461	RD14BB2C302J	RES. CARBON	3K	5%	1/6W
R462	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R463	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R464	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R465	NO USE				
R466	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R467	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R468	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R469	RN14BK2C1041D	RES. METAL FILM	1.04K	0.5%	1/6W
R470	RN14BK2C1301D	RES. METAL FILM	1.3K	0.5%	1/6W
R471	RN14BK2C1671D	RES. METAL FILM	1.67K	0.5%	1/6W
R472	RN14BK2C1002D	RES. METAL FILM	10K	0.5%	1/6W
R473	RD14BB2C203J	RES. CARBON	20K	5%	1/6W
R474	RN14BK2C6800D	RES. METAL FILM	680	0.5%	1/6W
R475	RN14BK2C6802D	RES. METAL FILM	68K	0.5%	1/6W
R476	RN14BK2C6801D	RES. METAL FILM	6.8K	0.5%	1/6W
R477	RN14BK2E6803D	RES. METAL FILM	680K	0.5%	1/4W
R478	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R479	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R480	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R481	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R482	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R483	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R484	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R485	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R486	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R487	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R488	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R489	NO USE				
R490	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R491	RD14BB2E471J	RES. CARBON	470	5%	1/4W
R492	RD14BB2E102J	RES. CARBON	1K	5%	1/4W
R493	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R494	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R495	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R496	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R497	NO USE				
R498	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R499	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R505	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R506	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R507	RD14BB2C100J	RES. CARBON	10	5%	1/6W
R508	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R509	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R510	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R551	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R601	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R602	RD14BB2C471J	RES. CARBON	470	5%	1/6W
S1	S60-0618-05	ROTARY SWITCH			
S2	S60-0618-05	ROTARY SWITCH			
S3	S60-0617-05	ROTARY SWITCH			
S4	S68-0643-05	PUSH SWITCH			
S5	S68-0643-05	PUSH SWITCH			
S6	S68-0643-05	PUSH SWITCH			
S7	S68-0643-05	PUSH SWITCH			
S8	S64-0605-05	LEVER SWITCH			
S9	S64-0605-05	LEVER SWITCH			
S10	S64-0605-05	LEVER SWITCH			
S101	S68-0642-05	PUSH SWITCH			
VR1	R05-3522-05	V.R.	10KB		
VR2	R05-3522-05	V.R.	10KB		
VR3	R05-3524-05	V.R.	10KB		
VR4	R05-3522-05	V.R.	10KB		
VR5	R05-3523-05	V.R.	10KB		
VR6	R05-3523-05	V.R.	10KB		
VR7	R05-3523-05	V.R.	10KB		
VR8	NO USE				
VR9	R05-3522-05	V.R.	10KB		
VR10	R05-3522-05	V.R.	10KB		
VR11	R31-0805-05	V.R.	50K		
VR101	R05-3522-05	V.R.	10KB		
VR401	R12-0567-05	RES. SEMI FIXED	500 B		
W201	E38-1271-05	WIRE ASS'Y			
W202	E38-1272-05	WIRE ASS'Y			
W203	NO USE				
W204	E38-1274-05	WIRE ASS'Y			
W205	E38-1275-05	WIRE ASS'Y;WITH W207			
W206	E38-1276-05	WIRE ASS'Y			
W207	NO USE				
W208	E38-1278-05	WIRE ASS'Y			
W551	E38-1280-05	WIRE ASS'Y;Y-CRT			
W554	E38-1158-05	WIRE ASS'Y;CH1 OUT			
W559	E38-1190-05	WIRE ASS'Y;CH SW			
W560	NO USE				
W561	E38-1191-05	WIRE ASS'Y;SWP END			
W901	E38-1192-05	WIRE ASS'Y;GND X2			

CS-4125 (~S/NO.7121000) ATTENUATOR UNIT

X75-1220-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	A22-1314-03	SUB PANEL			
	E21-0667-05	METAL TERMINAL			
	F10-1699-04	SHIELD PLATE:BNC			
	F11-1283-04	SHIELD CASE:ATT			
	G13-0757-04	CUSHION			
	J73-0364-02	PCB (UNMOUNTED)			
	N89-3008-41	SCREW,BINDING TAPTITE 3X8			
C101	C91-2664-05	CAP. FILM	0.022	10%	630V
C102	CC93FCH1H301J	CAP. CERAMIC	300P	5%	50V
C103	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C104	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C105	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C106	CC45FCH1H560J	CAP. CERAMIC	56P	5%	50V
C107	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C108	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C109	CC45FSL1H270J	CAP. CERAMIC	27P	5%	50V
C110	CF92FV1H122J	CAP. FILM	1200P	5%	50V
C111	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C112	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C113	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C114	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C115	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C118	C91-2670-05	CAP. CERAMIC	180P	5%	50V
C119	CC45FSL1H391J	CAP. CERAMIC	390P	5%	50V
C120	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C123	CC45FCH1H680J	CAP. CERAMIC	68P	5%	50V
C124	C91-0727-05	CAP. CERAMIC	18P	5%	50V
C125	NO USE				
C126	CC45FCH2H030C	CAP. CERAMIC	3P	0.25P	500V
C127	CC45FCH2H050C	CAP. CERAMIC	5P	0.25P	500V
C128	C91-2538-05	CAP. FILM	0.1	10%	63V
C129	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C130	CC45CH1H180JTA	CAP. CERAMIC	18P	5%	50V
C153	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C154	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C157	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C158	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C159	NO USE				
C160	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C161	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C162	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C163	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C164	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C201	C91-2664-05	CAP. FILM	0.022	10%	630V
C202	CC93FCH1H301J	CAP. CERAMIC	300P	5%	50V
C203	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C204	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C205	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C206	CC45FCH1H560J	CAP. CERAMIC	56P	5%	50V
C207	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C208	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C209	NO USE				
C210	CF92FV1H122J	CAP. FILM	1200P	5%	50V
C211	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C212	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C213	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C214	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C215	CC45FSL1H681J	CAP. CERAMIC	680P	5%	50V
C216	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C217	NO USE				
C218	C91-2670-05	CAP. CERAMIC	180P	5%	50V
C219	CC45FSL1H391J	CAP. CERAMIC	390P	5%	50V
C220	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C223	CC45FCH1H680J	CAP. CERAMIC	68P	5%	50V
C224	C91-0727-05	CAP. CERAMIC	18P	5%	50V
C225	NO USE				
C226	CC45FCH2H030C	CAP. CERAMIC	3P	0.25P	500V
C227	CC45FCH2H050C	CAP. CERAMIC	5P	0.25P	500V
C228	C91-2538-05	CAP. FILM	0.1	10%	63V
C229	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C253	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C254	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C255	NO USE				
C256	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C257	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C258	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C259	NO USE				
C260	C91-2538-05	CAP. FILM	0.1	10%	63V
C261	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C301	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C302	CC45FCH1H100D	CAP. CERAMIC	10P	0.5P	50V
C303	CE04HW1C100M	CAP. ELECTRO	10	20%	16V
C304	C91-2660-05	CAP. FILM	1200P	10%	400V
C305	C91-2661-05	CAP. FILM	1	10%	63V
C306	CC45FSL1H470J	CAP. CERAMIC	47P	5%	50V
C307	CC45FCH1H120J	CAP. CERAMIC	12P	5%	50V
C308	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C309	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C310	CE04HW1H010M	CAP. ELECTRO	1	20%	50V
C316	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C317	C91-2538-05	CAP. FILM	0.1	10%	63V
C321	CC45FCH1H470J	CAP. CERAMIC	47P	5%	50V
CN1	E40-7509-05	PIN CONNECTOR	17P		
CN2	E40-7509-05	PIN CONNECTOR	17P		
CN3	E40-7509-05	PIN CONNECTOR	17P		
CN51	E40-9008-05	PIN CONNECTOR	15P		
CN52	E40-9008-05	PIN CONNECTOR	15P		
CN53	E40-9008-05	PIN CONNECTOR	15P		
CN56	E40-3237-05	PIN CONNECTOR	2P		
CN152	E40-3237-05	PIN CONNECTOR	2P		
CP301	R90-0665-05	RES. NETWORK	7X10K		
CP302	R90-0665-05	RES. NETWORK	7X10K		
D101	1SS133	DIODE			
D102	1SS133	DIODE			
D151	1SS133	DIODE			
D152	1SS133	DIODE			
D153	1SS133	DIODE			
D154	1SS133	DIODE			
D155	1SS133	DIODE			
D201	1SS133	DIODE			
D202	1SS133	DIODE			
D251	1SS133	DIODE			
D252	1SS133	DIODE			
D253	1SS133	DIODE			
D254	1SS133	DIODE			
D255	1SS133	DIODE			
D301	1SS133	DIODE			
IC101	LT1097CN8	IC,OP-AMP			
IC201	LT1097CN8	IC,OP-AMP			
J1	E04-0259-05	COAXIAL CONNECTOR			
J2	E04-0259-05	COAXIAL CONNECTOR			
J3	E04-0259-05	COAXIAL CONNECTOR			
K101	S76-0027-05	RELAY			
K102	S76-0027-05	RELAY			
K103	S76-0027-05	RELAY			
K104	S76-0027-05	RELAY			
K105	S76-0027-05	RELAY			
K201	S76-0027-05	RELAY			
K202	S76-0027-05	RELAY			
K203	S76-0027-05	RELAY			
K204	S76-0027-05	RELAY			
K205	S76-0027-05	RELAY			
L101	L40-1011-70	FERRI INDUCTOR	100UH	10%	
L201	L40-1011-70	FERRI INDUCTOR	100UH	10%	
P1	E23-1520-05	EARTH TERMINAL			
P2	E23-1520-05	EARTH TERMINAL			
P3	E23-1520-05	EARTH TERMINAL			
P4	E23-1520-05	EARTH TERMINAL			
P5	E23-1520-05	EARTH TERMINAL			
P6	E23-1520-05	EARTH TERMINAL			
Q101	2SK304(E)	FET, N-CHANNEL			
Q102	2SC1923(O)	TR. SI, NPN			
Q103	2SA933S(R,S)	TR. SI, PNP			
Q104	2SA1005(K)	TR. SI, PNP			
Q105	2SC3779(D)	TR. SI, NPN			
Q106	2SC1740S(R,S)	TR. SI, NPN			
Q107	2SC3381(GR)	TR. SI, NPN			
Q108	2SC1923(O)	TR. SI, NPN			
Q109	3SK73(GR)	FET, N-CHANNEL			
Q110	IMX4	TR. SI, NPN			
Q111	2SC1740S(R,S)	TR. SI, NPN			
Q112	2SC1740S(R,S)	TR. SI, NPN			
Q113	2SC2926S(P,Q)	TR. SI, NPN			
Q114	2SA1005(K)	TR. SI, PNP			
Q115	2SA1005(K)	TR. SI, PNP			
Q116	2SA1005(K)	TR. SI, PNP			
Q117	2SA933S(R,S)	TR. SI, PNP			
Q118	2SA933S(R,S)	TR. SI, PNP			
Q119	2SA933S(R,S)	TR. SI, PNP			
Q120	2SA933S(R,S)	TR. SI, PNP			
Q131	2SA1459(L)	TR. SI, PNP			
Q151	2SA1564	TR. SI, PNP			
Q152	2SA1564	TR. SI, PNP			
Q153	2SA1564	TR. SI, PNP			
Q154	2SA1564	TR. SI, PNP			
Q155	2SA1564	TR. SI, PNP			
Q201	2SK304(E)	FET, N-CHANNEL			
Q202	2SC1923(O)	TR. SI, NPN			
Q203	2SA933S(R,S)	TR. SI, PNP			
Q204	2SA1005(K)	TR. SI, PNP			
Q205	2SC3779(D)	TR. SI, NPN			
Q206	2SC1740S(R,S)	TR. SI, NPN			
Q207	2SC3381(GR)	TR. SI, NPN			
Q208	2SC1923(O)	TR. SI, NPN			
Q209	3SK73(GR)	FET, N-CHANNEL			
Q210	IMX4	TR. SI, NPN			
Q211	2SC1740S(R,S)	TR. SI, NPN			
Q212	2SC1740S(R,S)	TR. SI, NPN			
Q213	2SC2926S(P,Q)	TR. SI, NPN			
Q214	2SA1005(K)	TR. SI, PNP			
Q215	2SA1005(K)	TR. SI, PNP			
Q216	2SA1005(K)	TR. SI, PNP			
Q217	2SA933S(R,S)	TR. SI, PNP			
Q218	2SA933S(R,S)	TR. SI, PNP			
Q219	2SA933S(R,S)	TR. SI, PNP			
Q220	2SA933S(R,S)	TR. SI, PNP			
Q221	2SA933S(R,S)	TR. SI, PNP			
Q222	2SA933S(R,S)	TR. SI, PNP			
Q223	2SC4049	TR. SI, NPN			
Q224	2SA933S(R,S)	TR. SI, PNP			
Q231	2SA933S(R,S)	TR. SI, PNP			
Q251	2SA1564	TR. SI, PNP			
Q252	2SA1564	TR. SI, PNP			
Q253	2SA1564	TR. SI, PNP			
Q254	2SA1564	TR. SI, PNP			
Q255	2SA1564	TR. SI, PNP			
Q301	2SK161(GR)	FET, N-CHANNEL			
Q302	2SC1740S(R,S)	TR. SI, NPN			
Q303	2SC1740S(R,S)	TR. SI, NPN			
Q304	2SC4049	TR. SI, NPN			
Q305	2SC1740S(R,S)	TR. SI, NPN			
Q306	2SC1740S(R,S)	TR. SI, NPN			
Q307	2SK332(E)	FET, N-CHANNEL			
Q308	2SC1740S(R,S)	TR. SI, NPN			
Q309	2SA1564	TR. SI, PNP			
Q310	2SC1740S(R,S)	TR. SI, NPN			
Q311	2SC1740S(R,S)	TR. SI, NPN			
Q312	2SC1740S(R,S)	TR. SI, NPN			
R1	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R2	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R3	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R102	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R103	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R104	RN14BK2E9903D	RES. METAL FILM	990K	0.5%	1/4W
R105	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R106	RN14BK2C1012D	RES. METAL FILM	10.1K	0.5%	1/6W
R107	RD14BB2C510J	RES. CARBON	51	5%	1/6W
R108	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R109	RN14BK2E9003D	RES. METAL FILM	900K	0.5%	1/4W
R110	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R111	RN14BK2C1113D	RES. METAL FILM	111K	0.5%	1/6W
R112	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R113	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W
R114	RD14BB2E684J	RES. CARBON	680K	5%	1/4W
R115	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R116	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R117	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R118	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R119	RD14BB2C273J	RES. CARBON	27K	5%	1/6W
R120	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R121	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R122	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R123	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R124	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R125	RN14BK2C3000D	RES. METAL FILM	300	0.5%	1/6W
R126	RN14BK2C1500D	RES. METAL FILM	150	0.5%	1/6W
R127	RN14BK2C90R0D	RES. METAL FILM	90.0	0.5%	1/6W
R128	RN14BK2C60R0D	RES. METAL FILM	60.0	0.5%	1/6W
R129	RD14BB2C151J	RES. CARBON	150	5%	1/6W

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
R130	RD14BB2C390J	RES. CARBON	39	5%	1/6W
R131	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R132	RD14BB2C623J	RES. CARBON	62K	5%	1/6W
R133	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R134	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R135	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W
R136	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R137	RN14BK2C75R0F	RES. METAL FILM	75.0	1%	1/6W
R138	RN14BK2C75R0F	RES. METAL FILM	75.0	1%	1/6W
R139	RD14BB2C273J	RES. CARBON	27K	5%	1/6W
R140	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R141	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R142	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R143	RD14BB2C163J	RES. CARBON	16K	5%	1/6W
R144	RD14BB2C163J	RES. CARBON	16K	5%	1/6W
R145	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R146	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R147	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R148	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R149	RN14BK2C4300F	RES. METAL FILM	430	1%	1/6W
R150	RN14BK2C4300F	RES. METAL FILM	430	1%	1/6W
R151	RD14BB2C124J	RES. CARBON	120K	5%	1/6W
R152	RN14BK2C1801F	RES. METAL FILM	1.8K	1%	1/6W
R153	RN14BK2C1801F	RES. METAL FILM	1.8K	1%	1/6W
R154	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R155	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R156	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R157	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R158	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R159	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R160	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R161	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R162	RD14BB2C271J	RES. CARBON	270	5%	1/6W
R163	RD14BB2C183J	RES. CARBON	18K	5%	1/6W
R164	RD14BB2C181J	RES. CARBON	180	5%	1/6W
R165	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R166	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R167	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R168	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R169	RD14BB2C752J	RES. CARBON	7.5K	5%	1/6W
R170	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R171	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R172	RD14BB2C132J	RES. CARBON	1.3K	5%	1/6W
R173	NO USE				
R174	RD14BB2C561J	RES. CARBON	560	5%	1/6W
R175	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R176	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R177	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R178	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R179	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R180	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R181	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R182	NO USE				
R183	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R187	RD14BB2C133J	RES. CARBON	13K	5%	1/6W
R191	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R192	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R193	RD14BB2E620J	RES. CARBON	62	5%	1/4W
R194	RD14BB2E620J	RES. CARBON	62	5%	1/4W
R195	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R198	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R199	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R202	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R203	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R204	RN14BK2E9903D	RES. METAL FILM	990K	0.5%	1/4W
R205	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R206	RN14BK2C1012D	RES. METAL FILM	10.1K	0.5%	1/6W
R207	RD14BB2C510J	RES. CARBON	51	5%	1/6W
R208	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R209	RN14BK2E9003D	RES. METAL FILM	900K	0.5%	1/4W
R210	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R211	RN14BK2C1113D	RES. METAL FILM	111K	0.5%	1/6W
R212	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R213	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W
R214	RD14BB2E684J	RES. CARBON	680K	5%	1/4W
R215	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R216	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R217	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R218	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R219	RD14BB2C273J	RES. CARBON	27K	5%	1/6W
R220	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R221	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R222	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R223	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R224	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R225	RN14BK2C3000D	RES. METAL FILM	300	0.5%	1/6W
R226	RN14BK2C1500D	RES. METAL FILM	150	0.5%	1/6W
R227	RN14BK2C90R0D	RES. METAL FILM	90.0	0.5%	1/6W
R228	RN14BK2C60R0D	RES. METAL FILM	60.0	0.5%	1/6W
R229	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R230	RD14BB2C390J	RES. CARBON	39	5%	1/6W
R231	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R232	RD14BB2C623J	RES. CARBON	62K	5%	1/6W
R233	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R234	RD14BB2C751J	RES. CARBON	750	5%	1/6W
R235	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W
R236	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R237	RN14BK2C75R0F	RES. METAL FILM	75.0	1%	1/6W
R238	RN14BK2C75R0F	RES. METAL FILM	75.0	1%	1/6W
R239	RD14BB2C273J	RES. CARBON	27K	5%	1/6W
R240	RD14BB2C432J	RES. CARBON	4.3K	5%	1/6W
R241	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R242	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R243	RD14BB2C163J	RES. CARBON	16K	5%	1/6W
R244	RD14BB2C163J	RES. CARBON	16K	5%	1/6W
R245	RN14BK2C1000F	RES. METAL FILM	100	1%	1/6W
R246	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R247	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R248	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R249	RN14BK2C4300F	RES. METAL FILM	430	1%	1/6W
R250	RN14BK2C4300F	RES. METAL FILM	430	1%	1/6W
R251	RD14BB2C823J	RES. CARBON	82K	5%	1/6W
R252	RN14BK2C1801F	RES. METAL FILM	1.8K	1%	1/6W
R253	RN14BK2C1801F	RES. METAL FILM	1.8K	1%	1/6W
R254	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R255	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R256	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R257	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R258	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R259	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R260	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R261	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R262	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R263	RD14BB2C183J	RES. CARBON	18K	5%	1/6W
R264	RN14BK2C2200F	RES. METAL FILM	220	1%	1/6W
R265	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R266	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R267	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R268	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R269	RD14BB2C752J	RES. CARBON	7.5K	5%	1/6W
R270	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R271	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R272	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R273	RD14BB2C752J	RES. CARBON	7.5K	5%	1/6W
R274	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R275	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R276	NO USE				
R277	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R278	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R279	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R280	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R281	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R282	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R283	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R284	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R285	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R286	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R287	RD14BB2C133J	RES. CARBON	13K	5%	1/6W
R290	RD14BB2C112J	RES. CARBON	1.1K	5%	1/6W
R291	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R292	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R293	RD14BB2E620J	RES. CARBON	62	5%	1/4W
R294	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R295	RD14BB2C620J	RES. CARBON	62	5%	1/6W
R296	RD14BB2C112J	RES. CARBON	1.1K	5%	1/6W
R297	NO USE				
R298	RD14BB2C562J	RES. CARBON	5.6K	5%	1/6W
R299	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R300	NO USE				
R301	RD14BB2E105J	RES. CARBON	1M	5%	1/4W
R302	RD14BB2E684J	RES. CARBON	680K	5%	1/4W
R303	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R304	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R305	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R306	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R307	NO USE				
R308	RN14BK2C3001F	RES. METAL FILM	3K	1%	1/6W
R309	RN14BK2C3901F	RES. METAL FILM	3.9K	1%	1/6W
R310	RN14BK2C3301F	RES. METAL FILM	3.3K	1%	1/6W
R311	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R312	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R313	NO USE				
R314	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R315	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R316	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R317	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R318	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R319	RD14BB2C393J	RES. CARBON	39K	5%	1/6W
R320	RN14BK2C1501F	RES. METAL FILM	1.5K	1%	1/6W
R321	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R322	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R323	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R324	RD14BB2C561J	RES. CARBON	560	5%	1/6W
R325	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R326	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R327	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R328	RD14BB2C112J	RES. CARBON	1.1K	5%	1/6W

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
R329	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R330	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R331	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R332	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R333	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R334	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R351	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
S101	S64-0603-05	LEVER SWITCH			
S201	S64-0603-05	LEVER SWITCH			
TC101	C05-0496-05	CAP. TRIMMER	10P		
TC102	C05-0495-05	CAP. TRIMMER	6P		
TC103	C05-0495-05	CAP. TRIMMER	6P		
TC104	C05-0495-05	CAP. TRIMMER	6P		
TC201	C05-0496-05	CAP. TRIMMER	10P		
TC202	C05-0495-05	CAP. TRIMMER	6P		
TC203	C05-0495-05	CAP. TRIMMER	6P		
TC204	C05-0495-05	CAP. TRIMMER	6P		
TC205	C05-0472-05	CAP. TRIMMER	50P		
VR101	R12-3584-05	RES. SEMI FIXED	47KB		
VR102	R12-0869-05	RES. SEMI FIXED	100 B		
VR103	R12-5085-05	RES. SEMI FIXED	100 B		
VR104	R12-1589-05	RES. SEMI FIXED	1KB		
VR201	R12-3584-05	RES. SEMI FIXED	47KB		
VR202	R12-0869-05	RES. SEMI FIXED	100 B		
VR203	R12-0869-05	RES. SEMI FIXED	100 B		
VR204	R12-3584-05	RES. SEMI FIXED	47KB		
VR205	R12-1589-05	RES. SEMI FIXED	1KB		
VR301	R12-3585-05	RES. SEMI FIXED	10KB		
VR302	R12-0873-05	RES. SEMI FIXED	470 B		
VR303	R12-3583-05	RES. SEMI FIXED	22KB		
W555	E38-1159-05	WIRE ASS'Y:ATT TO FINAL			
W556	E38-1161-05	WIRE ASS'Y:ATT TO FINAL			
W557	E38-1162-05	WIRE ASS'Y:WITH W 558			

CS-4125 ATTENUATOR UNIT

X75-1250-01

REF.NO	PARTS NO	NAME & DESCRIPTION			
	A22-1314-13	SUB PANEL			
	E21-0667-05	METAL TERMINAL			
	F10-1699-04	SHIELD PLATE;BNC			
	F11-1283-04	SHIELD CASE;ATT			
	J73-0416-02	PCB (UNMOUNTED)			
	N89-3008-41	SCREW,BINDING TAPTITE 3X8			
C101	C91-2664-05	CAP. FILM	0.022	10%	630V
C102	CC93FCH1H301J	CAP. CERAMIC	300P	5%	50V
C103	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C104	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C105	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C106	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C107	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C108	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C109	NO USE				
C110	CF92FV1H122J	CAP. FILM	1200P	5%	50V
C111	CE04EW1A221M	CAP. ELECTRO	220	20%	10V
C112	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C113	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C114	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C115	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C118	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C119	CC45FCH1H820J	CAP. CERAMIC	82P	5%	50V
C122	CC45FCH1H330J	CAP. CERAMIC	33P	5%	50V
C123	CC45FCH1H180J	CAP. CERAMIC	18P	5%	50V
C124	C91-0727-05	CAP. CERAMIC	18P	5%	50V
C125	NO USE				
C126	CC45FCH2H030C	CAP. CERAMIC	3P	0.25P	500V
C127	CC45FCH2H050C	CAP. CERAMIC	5P	0.25P	500V
C128	C91-2538-05	CAP. FILM	0.1	10%	63V
C129	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C130	CC45FCH1H120J	CAP. CERAMIC	12P	5%	50V
C150	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C153	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C154	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C157	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C160	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C161	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C162	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C163	CE04EW1A101M	CAP. ELECTRO	100	20%	10V
C164	CE04EW1A221M	CAP. ELECTRO	220	20%	10V
C201	C91-2664-05	CAP. FILM	0.022	10%	630V
C202	CC93FCH1H301J	CAP. CERAMIC	300P	5%	50V
C203	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C204	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C205	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C206	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C207	CE04EW1A470M	CAP. ELECTRO	47	20%	10V
C208	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C209	NO USE				
C210	CF92FV1H122J	CAP. FILM	1200P	5%	50V
C211	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C212	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C213	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C214	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C215	CC45FSL1H681J	CAP. CERAMIC	680P	5%	50V
C216	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C217	NO USE				
C218	CC45FSL1H221J	CAP. CERAMIC	220P	5%	50V
C219	CC45FCH1H820J	CAP. CERAMIC	82P	5%	50V
C222	CC45FCH1H050C	CAP. CERAMIC	5P	0.25P	50V
C223	CC45FCH1H180J	CAP. CERAMIC	18P	5%	50V
C224	C91-0727-05	CAP. CERAMIC	18P	5%	50V
C225	NO USE				
C226	CC45FCH2H030C	CAP. CERAMIC	3P	0.25P	500V
C227	CC45FCH2H050C	CAP. CERAMIC	5P	0.25P	500V
C228	C91-2538-05	CAP. FILM	0.1	10%	63V
C229	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C250	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C253	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C254	CE04LW1A331M	CAP. ELECTRO	330	20%	10V
C255	NO USE				
C256	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C257	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C258	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C259	C91-2538-05	CAP. FILM	0.1	10%	63V
C260	C91-2538-05	CAP. FILM	0.1	10%	63V
C261	CE04EW1A470M	CAP. ELECTRO	47	20%	10V
C281	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C301	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C302	CC45FCH1H150J	CAP. CERAMIC	15P	5%	50V
C303	CE04HW1C100M	CAP. ELECTRO	10	20%	16V
C304	C91-2671-05	CAP. FILM	1200P	5%	50V
C305	C91-2661-05	CAP. FILM	1	10%	63V
C306	CC45FSL1H470J	CAP. CERAMIC	47P	5%	50V
C307	CC45FCH1H150J	CAP. CERAMIC	15P	5%	50V
C308	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C309	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C310	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C316	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C317	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C321	CC45FCH1H470J	CAP. CERAMIC	47P	5%	50V
C332	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
CN51	E40-9008-05	PIN CONNECTOR	15P		
CN52	E40-5021-05	PIN CONNECTOR	7P		
CN53	E40-5021-05	PIN CONNECTOR	7P		
CN56	E40-3237-05	PIN CONNECTOR	2P		
CN152	E40-3237-05	PIN CONNECTOR	2P		
CN201	E40-7566-05	PIN CONNECTOR	5P		
CN202	E40-7565-05	PIN CONNECTOR	3P		
CN203	E40-7566-05	PIN CONNECTOR	5P		
CN204	E40-7567-05	PIN CONNECTOR	7P		
CN208	E40-7567-05	PIN CONNECTOR	7P		
CN209	NO USE				
CN210	E40-7565-05	PIN CONNECTOR	3P		
CN211	E40-7565-05	PIN CONNECTOR	3P		
D101	1SS133	DIODE			
D102	1SS133	DIODE			
D151	1SS133	DIODE			
D152	1SS133	DIODE			
D153	1SS133	DIODE			
D154	1SS133	DIODE			
D155	1SS133	DIODE			
D201	1SS133	DIODE			
D202	1SS133	DIODE			
D251	1SS133	DIODE			
D252	1SS133	DIODE			
D253	1SS133	DIODE			

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
D254	1SS133	DIODE
D255	1SS133	DIODE
IC101	LT1097CN8	IC,OP-AMP
IC201	LT1097CN8	IC,OP-AMP
J1	E04-0259-05	COAXIAL CONNECTOR
J2	E04-0259-05	COAXIAL CONNECTOR
J3	E04-0259-05	COAXIAL CONNECTOR
K101	S76-0027-05	RELAY
K102	S76-0027-05	RELAY
K103	S76-0027-05	RELAY
K104	S76-0027-05	RELAY
K105	S76-0027-05	RELAY
K201	S76-0027-05	RELAY
K202	S76-0027-05	RELAY
K203	S76-0027-05	RELAY
K204	S76-0027-05	RELAY
K205	S76-0027-05	RELAY
L101	L40-1011-70	FERRI INDUCTOR 100
L201	L40-1011-70	FERRI INDUCTOR 100
P1	E23-1520-05	EARTH TERMINAL
P2	E23-1520-05	EARTH TERMINAL
P3	E23-1520-05	EARTH TERMINAL
P4	E23-1520-05	EARTH TERMINAL
P5	E23-1520-05	EARTH TERMINAL
P6	E23-1520-05	EARTH TERMINAL
P7	E23-1520-05	EARTH TERMINAL
Q101	2SK304(E)	FET, N-CHANNEL
Q102	2SC1923(O)	TR. SI, NPN
Q103	2SA933ASLN(R,S)	TR. SI, PNP
Q104	2SA1005(K)	TR. SI, PNP
Q105	2SC3779(D)	TR. SI, NPN
Q106	2SC1740S(R,S)	TR. SI, NPN
Q107	2SC3381(GR)	TR. SI, NPN
Q108	2SC1923(O)	TR. SI, NPN
Q109	3SK73(GR)	FET, N-CHANNEL
Q110	IMX4	TR. SI, NPN
Q111	2SC1740S(R,S)	TR. SI, NPN
Q112	2SC1740S(R,S)	TR. SI, NPN
Q113	2SC1906	TR. SI, NPN
Q114	2SA1005(K)	TR. SI, PNP
Q115	2SA1005(K)	TR. SI, PNP
Q116	2SA1005(K)	TR. SI, PNP
Q117	2SA933ASLN(R,S)	TR. SI, PNP
Q118	2SA933ASLN(R,S)	TR. SI, PNP
Q119	2SA933ASLN(R,S)	TR. SI, PNP
Q120	2SA933ASLN(R,S)	TR. SI, PNP
Q131	2SA1459(K)	TR. SI, PNP
Q151	DTA114Y(S)	TR. SI, PNP
Q152	DTA114Y(S)	TR. SI, PNP
Q153	DTA114Y(S)	TR. SI, PNP
Q154	DTA114Y(S)	TR. SI, PNP
Q155	DTA114Y(S)	TR. SI, PNP
Q201	2SK304(E)	FET, N-CHANNEL
Q202	2SC1923(O)	TR. SI, NPN
Q203	2SA933ASLN(R,S)	TR. SI, PNP
Q204	2SA1005(K)	TR. SI, PNP
Q205	2SC3779(D)	TR. SI, NPN
Q206	2SC1740S(R,S)	TR. SI, NPN
Q207	2SC3381(GR)	TR. SI, NPN
Q208	2SC1923(O)	TR. SI, NPN
Q209	3SK73(GR)	FET, N-CHANNEL
Q210	IMX4	TR. SI, NPN
Q211	2SC1740S(R,S)	TR. SI, NPN
Q212	2SC1740S(R,S)	TR. SI, NPN
Q213	2SC1906	TR. SI, NPN
Q214	2SA1005(K)	TR. SI, PNP
Q215	2SA1005(K)	TR. SI, PNP
Q216	2SA1005(K)	TR. SI, PNP
Q217	2SA933ASLN(R,S)	TR. SI, PNP
Q218	2SA933ASLN(R,S)	TR. SI, PNP
Q219	2SA933ASLN(R,S)	TR. SI, PNP
Q220	2SA933ASLN(R,S)	TR. SI, PNP
Q221	2SA933ASLN(R,S)	TR. SI, PNP
Q222	2SA933ASLN(R,S)	TR. SI, PNP
Q223	DTC114Y(S)	TR. SI, NPN
Q224	2SA933ASLN(R,S)	TR. SI, PNP
Q231	2SA933ASLN(R,S)	TR. SI, PNP
Q251	DTA114Y(S)	TR. SI, PNP
Q252	DTA114Y(S)	TR. SI, PNP
Q253	DTA114Y(S)	TR. SI, PNP
Q254	DTA114Y(S)	TR. SI, PNP
Q255	DTA114Y(S)	TR. SI, PNP
Q301	2SK161(GR)	FET, N-CHANNEL
Q302	2SC1740S(R,S)	TR. SI, NPN
Q303	2SC1740S(R,S)	TR. SI, NPN
Q304	DTC114Y(S)	TR. SI, NPN
Q305	2SC1740S(R,S)	TR. SI, NPN
Q306	2SC1740S(R,S)	TR. SI, NPN
Q307	2SK389(GR)	FET, N-CHANNEL
Q308	2SC1740S(R,S)	TR. SI, NPN
Q309	DTA114Y(S)	TR. SI, PNP
Q310	2SC1740S(R,S)	TR. SI, NPN
Q311	2SC1740S(R,S)	TR. SI, NPN
Q312	2SC1740S(R,S)	TR. SI, NPN
R1	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R2	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R3	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R102	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R103	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R104	RN14BK2E9903D	RES. METAL FILM 990K 0.5% 1/4W
R105	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R106	RN14BK2C1012D	RES. METAL FILM 10.1K0.5% 1/6W
R107	RD14BB2C470J	RES. CARBON 47 5% 1/6W
R108	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R109	RN14BK2E9003D	RES. METAL FILM 900K 0.5% 1/4W
R110	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R111	RN14BK2C1113D	RES. METAL FILM 111K 0.5% 1/6W
R112	RD14BB2C161J	RES. CARBON 160 5% 1/6W
R113	RN14BK2C5003F	RES. METAL FILM 500K 1% 1/6W
R114	RD14BB2E684J	RES. CARBON 680K 5% 1/4W
R115	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R116	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R117	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R118	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R119	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R120	RD14BB2C622J	RES. CARBON 6.2K 5% 1/6W
R121	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R122	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R123	RD14BB2E272J	RES. CARBON 2.7K 5% 1/4W
R124	RD14BB2C162J	RES. CARBON 1.6K 5% 1/6W
R125	RN14BK2C3000D	RES. METAL FILM 300 0.5% 1/6W
R126	RN14BK2C1500D	RES. METAL FILM 150 0.5% 1/6W
R127	RN14BK2C90R0D	RES. METAL FILM 90.0 0.5% 1/6W
R128	RN14BK2C60R0D	RES. METAL FILM 60.0 0.5% 1/6W
R129	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R130	RD14BB2C390J	RES. CARBON 39 5% 1/6W
R131	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R132	RD14BB2C623J	RES. CARBON 62K 5% 1/6W
R133	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R134	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R135	RN14BK2C5003F	RES. METAL FILM 500K 1% 1/6W
R136	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R137	RN14BK2C1500F	RES. METAL FILM 150 1% 1/6W
R138	RN14BK2C1500F	RES. METAL FILM 150 1% 1/6W
R139	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R140	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R141	RN14BK2C6800F	RES. METAL FILM 680 1% 1/6W
R142	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R143	RD14BB2E822J	RES. CARBON 8.2K 5% 1/4W
R144	NO USE	
R145	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R146	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R147	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R148	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R149	RD14BB2C390J	RES. CARBON 39 5% 1/6W
R150	NO USE	
R151	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R152	RN14BK2C1001F	RES. METAL FILM 1K 1% 1/6W
R153	RN14BK2C1001F	RES. METAL FILM 1K 1% 1/6W
R154	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R155	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R156	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R157	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R158	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R159	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R160	RN14BK2C1601F	RES. METAL FILM 1.6K 1% 1/6W
R161	RN14BK2C1601F	RES. METAL FILM 1.6K 1% 1/6W
R162	NO USE	
R163	RD14BB2C183J	RES. CARBON 18K 5% 1/6W
R164	RD14BB2C181J	RES. CARBON 180 5% 1/6W
R165	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R166	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R167	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R168	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R169	RD14BB2C752J	RES. CARBON 7.5K 5% 1/6W
R170	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R171	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R172	RD14BB2C112J	RES. CARBON 1.1K 5% 1/6W
R173	R92-1061-05	JUMPING RES. ZERO OHM(5MM)
R174	RD14BB2C561J	RES. CARBON 560 5% 1/6W
R175	RD14BB2C822J	RES. CARBON 8.2K 5% 1/6W
R176	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
R177	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R178	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R179	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
R180	RD14BB2C220J	RES. CARBON 22 5% 1/6W

PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION
R181	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R182	RD14BB2C680J	RES. CARBON 68 5% 1/6W
R183	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R184	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R185	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R186	NO USE	
R187	RD14BB2C563J	RES. CARBON 56K 5% 1/6W
R188	NO USE	
R189	RD14BB2C363J	RES. CARBON 36K 5% 1/6W
R190	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R191	RD14BB2C620J	RES. CARBON 62 5% 1/6W
R192	RD14BB2C620J	RES. CARBON 62 5% 1/6W
R193	RD14BB2C620J	RES. CARBON 62 5% 1/6W
R194	RD14BB2E620J	RES. CARBON 62 5% 1/4W
R195	RD14BB2E620J	RES. CARBON 62 5% 1/4W
R198	RD14BB2C622J	RES. CARBON 6.2K 5% 1/6W
R199	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R202	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R203	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R204	RN14BK2E9903D	RES. METAL FILM 990K 0.5% 1/4W
R205	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R206	RN14BK2C1012D	RES. METAL FILM 10.1K0.5% 1/6W
R207	RD14BB2C470J	RES. CARBON 47 5% 1/6W
R208	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R209	RN14BK2E9003D	RES. METAL FILM 900K 0.5% 1/4W
R210	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R211	RN14BK2C1113D	RES. METAL FILM 111K 0.5% 1/6W
R212	RD14BB2C161J	RES. CARBON 160 5% 1/6W
R213	RN14BK2C5003F	RES. METAL FILM 500K 1% 1/6W
R214	RD14BB2E684J	RES. CARBON 680K 5% 1/4W
R215	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R216	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R217	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R218	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R219	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R220	RD14BB2C622J	RES. CARBON 6.2K 5% 1/6W
R221	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R222	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R223	RD14BB2E272J	RES. CARBON 2.7K 5% 1/4W
R224	RD14BB2C162J	RES. CARBON 1.6K 5% 1/6W
R225	RN14BK2C3000D	RES. METAL FILM 300 0.5% 1/6W
R226	RN14BK2C1500D	RES. METAL FILM 150 0.5% 1/6W
R227	RN14BK2C90R0D	RES. METAL FILM 90.0 0.5% 1/6W
R228	RN14BK2C60R0D	RES. METAL FILM 60.0 0.5% 1/6W
R229	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R230	RD14BB2C390J	RES. CARBON 39 5% 1/6W
R231	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R232	RD14BB2C623J	RES. CARBON 62K 5% 1/6W
R233	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R234	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R235	RN14BK2C5003F	RES. METAL FILM 500K 1% 1/6W
R236	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R237	RN14BK2C1500F	RES. METAL FILM 150 1% 1/6W
R238	RN14BK2C1500F	RES. METAL FILM 150 1% 1/6W
R239	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R240	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R241	RN14BK2C6800F	RES. METAL FILM 680 1% 1/6W
R242	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R243	RD14BB2E822J	RES. CARBON 8.2K 5% 1/4W
R244	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R245	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R246	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R247	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R248	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R249	RD14BB2C390J	RES. CARBON 39 5% 1/6W
R250	RD14BB2C563J	RES. CARBON 56K 5% 1/6W
R251	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R252	RN14BK2C1001F	RES. METAL FILM 1K 1% 1/6W
R253	RN14BK2C1001F	RES. METAL FILM 1K 1% 1/6W
R254	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R255	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R256	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R257	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R258	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R259	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R260	RN14BK2C1601F	RES. METAL FILM 1.6K 1% 1/6W
R261	RN14BK2C1601F	RES. METAL FILM 1.6K 1% 1/6W
R262	RD14BB2C821J	RES. CARBON 820 5% 1/6W
R263	RD14BB2C183J	RES. CARBON 18K 5% 1/6W
R264	RN14BK2C2200F	RES. METAL FILM 220 1% 1/6W
R265	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R266	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R267	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R268	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R269	RD14BB2C752J	RES. CARBON 7.5K 5% 1/6W
R270	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R271	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R272	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R273	RD14BB2C752J	RES. CARBON 7.5K 5% 1/6W
R274	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R275	RD14BB2C822J	RES. CARBON 8.2K 5% 1/6W
R276	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R277	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R278	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R279	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
R280	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R281	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R282	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R283	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R284	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R285	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R286	RD14BB2C750J	RES. CARBON 75 5% 1/6W
R287	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R288	RD14BB2C680J	RES. CARBON 68 5% 1/6W
R289	RD14BB2C363J	RES. CARBON 36K 5% 1/6W
R290	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R291	RD14BB2C620J	RES. CARBON 62 5% 1/6W
R292	RD14BB2C620J	RES. CARBON 62 5% 1/6W
R293	RD14BB2E620J	RES. CARBON 62 5% 1/4W
R294	RD14BB2E620J	RES. CARBON 62 5% 1/4W
R295	RD14BB2E620J	RES. CARBON 62 5% 1/4W
R296	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R297	RD14BB2C432J	RES. CARBON 4.3K 5% 1/6W
R298	RD14BB2C622J	RES. CARBON 6.2K 5% 1/6W
R299	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R300	NO USE	
R301	RD14BB2E105J	RES. CARBON 1M 5% 1/4W
R302	RD14BB2E684J	RES. CARBON 680K 5% 1/4W
R303	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R304	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R305	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R306	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R307	NO USE	
R308	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R309	RN14BK2C3901F	RES. METAL FILM 3.9K 1% 1/6W
R310	RN14BK2C3301F	RES. METAL FILM 3.3K 1% 1/6W
R311	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R312	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R313	NO USE	
R314	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R315	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R316	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R317	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R318	RN14BK2C9101F	RES. METAL FILM 9.1K 1% 1/6W
R319	RN14BK2C3902F	RES. METAL FILM 39K 1% 1/6W
R320	RN14BK2C1501F	RES. METAL FILM 1.5K 1% 1/6W
R321	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R322	NO USE	
R323	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R324	RD14BB2C561J	RES. CARBON 560 5% 1/6W
R325	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R326	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R327	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R328	RD14BB2C112J	RES. CARBON 1.1K 5% 1/6W
R329	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R330	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R331	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R332	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R333	NO USE	
R334	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R335	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R336	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R351	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
S101	S64-0603-15	LEVER SWITCH
S201	S64-0603-15	LEVER SWITCH
TC101	C05-0496-05	CAP. TRIMMER 10P
TC102	C05-0495-05	CAP. TRIMMER 6P
TC103	C05-0495-05	CAP. TRIMMER 6P
TC104	C05-0495-05	CAP. TRIMMER 6P
TC201	C05-0496-05	CAP. TRIMMER 10P
TC202	C05-0495-05	CAP. TRIMMER 6P
TC203	C05-0495-05	CAP. TRIMMER 6P
TC204	C05-0495-05	CAP. TRIMMER 6P
TC205	C05-0445-05	CAP. TRIMMER 20P
TH202	112-103-2FM	THERMISTOR
VR101	R12-3584-05	RES. SEMI FIXED 47KB
VR102	R12-3582-05	RES. SEMI FIXED 10KB
VR103	R12-0869-05	RES. SEMI FIXED 100 B
VR104	R12-1589-05	RES. SEMI FIXED 1KB
VR105	R12-0869-05	RES. SEMI FIXED 100 B
VR201	R12-3584-05	RES. SEMI FIXED 47KB
VR202	R12-3582-05	RES. SEMI FIXED 10KB
VR203	R12-0869-05	RES. SEMI FIXED 100 B
VR204	R12-1589-05	RES. SEMI FIXED 1KB
VR205	R12-3584-05	RES. SEMI FIXED 47KB
VR206	R12-0869-05	RES. SEMI FIXED 100 B
VR301	R12-3585-05	RES. SEMI FIXED 10KB
VR302	R12-0873-05	RES. SEMI FIXED 470 B
VR303	R12-3582-05	RES. SEMI FIXED 10KB
W555	E38-1159-05	WIRE ASS'Y:ATT TO FINAL
W556	E38-1161-05	WIRE ASS'Y:ATT TO FINAL
W557	E38-1162-05	WIRE ASS'Y:WITH W 558

PARTS LIST

CS-4135 ATTENUATOR UNIT

X75-1250-00

REF.NO	PARTS NO	NAME & DESCRIPTION			
	A22-1314-13	SUB PANEL			
	E21-0667-05	METAL TERMINAL			
	F10-1699-04	SHIELD PLATE;BNC			
	F10-2508-04	SHIELD PLATE;C101,201			
	F11-1283-04	SHIELD CASE;ATT			
	J73-0416-02	PCB (UNMOUNTED)			
	N89-3008-41	SCREW,BINDING TAPTITE 3X8			
C100	CC45FCH1H120J	CAP. CERAMIC	12P	5%	50V
C101	C91-2664-05	CAP. FILM	0.022	10%	630V
C102	CC93FCH1H301J	CAP. CERAMIC	300P	5%	50V
C103	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C104	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C105	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C106	CC45FCH1H330J	CAP. CERAMIC	33P	5%	50V
C107	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C108	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C109	NO USE				
C110	CF92FV1H222J	CAP. POLYESTER	2200P	5%	50V
C111	CE04EW1A221M	CAP. ELECTRO	220	20%	10V
C112	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C113	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C114	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C115	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C118	CC45FSL1H181J	CAP. CERAMIC	180P	5%	50V
C119	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C122	CC45FCH1H030C	CAP. CERAMIC	3P	0.25P	50V
C123	CC45FCH1H180J	CAP. CERAMIC	18P	5%	50V
C124	C91-0727-05	CAP. CERAMIC	18P	5%	50V
C125	NO USE				
C126	CC45FCH2H030C	CAP. CERAMIC	3P	0.25P	500V
C127	CC45FCH2H050C	CAP. CERAMIC	5P	0.25P	500V
C128	C91-2538-05	CAP. FILM	0.1	10%	63V
C129	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C130	NO USE				
C131	C91-1226-05	CAP. CERAMIC	1.8	20%	50V
C150	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C151	CC45FCH1H100D	CAP. CERAMIC	10P	0.5P	50V
C152	NO USE				
C153	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C154	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C157	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C158	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C159	NO USE				
C160	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C161	CE04LW1A470M	CAP. ELECTRO	47	20%	10V
C162	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C163	CE04EW1A101M	CAP. ELECTRO	100	20%	10V
C164	CE04EW1A221M	CAP. ELECTRO	220	20%	10V
C200	CC45FCH1H120J	CAP. CERAMIC	12P	5%	50V
C201	C91-2664-05	CAP. FILM	0.022	10%	630V
C202	CC93FCH1H301J	CAP. CERAMIC	300P	5%	50V
C203	CC45FCH1H390J	CAP. CERAMIC	39P	5%	50V
C204	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C205	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C206	CC45FCH1H270J	CAP. CERAMIC	27P	5%	50V
C207	CE04EW1A470M	CAP. ELECTRO	47	20%	10V
C208	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C209	NO USE				
C210	CF92FV1H222J	CAP. POLYESTER	2200P	5%	50V
C211	CE04LW1A221M	CAP. ELECTRO	220	20%	10V
C212	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C213	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C214	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C215	NO USE				
C216	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C217	NO USE				
C218	CC45FSL1H181J	CAP. CERAMIC	180P	5%	50V
C219	CC45FCH1H101J	CAP. CERAMIC	100P	5%	50V
C222	CC45FCH1H070D	CAP. CERAMIC	7P	0.5P	50V
C223	CC45FCH1H180J	CAP. CERAMIC	18P	5%	50V
C224	C91-0727-05	CAP. CERAMIC	18P	5%	50V
C225	NO USE				
C226	CC45FCH2H030C	CAP. CERAMIC	3P	0.25P	500V
C227	CC45FCH2H050C	CAP. CERAMIC	5P	0.25P	500V
C228	C91-2538-05	CAP. FILM	0.1	10%	63V
C229	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C230	NO USE				
C231	C91-1226-05	CAP. CERAMIC	1.8	20%	50V
C250	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C251	CC45FCH1H100D	CAP. CERAMIC	10P	0.5P	50V
C252	NO USE				
C253	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C256	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C257	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C258	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C259	C91-2538-05	CAP. FILM	0.1	10%	63V
C260	C91-2538-05	CAP. FILM	0.1	10%	63V
C261	CE04EW1A470M	CAP. ELECTRO	47	20%	10V
C281	CE04EW1A331M	CAP. ELECTRO	330	20%	10V
C291	CC45FSL1H100J	CAP. CERAMIC	10P	5%	50V
C301	C91-2584-05	CAP. CERAMIC	1000P	10%	400V
C302	CC45FCH1H100D	CAP. CERAMIC	10P	0.5P	50V
C303	CE04HW1C100M	CAP. ELECTRO	10	20%	16V
C304	C91-2671-05	CAP. FILM	1200P	5%	50V
C305	C91-2661-05	CAP. FILM	1	10%	63V
C306	CC45FSL1H470J	CAP. CERAMIC	47P	5%	50V
C307	CC45FCH1H150J	CAP. CERAMIC	15P	5%	50V
C308	C91-0769-05	CAP. CERAMIC	0.01	20%	16V
C309	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
C310	CE04LW1H010M	CAP. ELECTRO	1	20%	50V
C316	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C317	CE04LW1A101M	CAP. ELECTRO	100	20%	10V
C321	CC45FCH1H470J	CAP. CERAMIC	47P	5%	50V
C332	CF92FV1H103J	CAP. POLYESTER	0.01	5%	50V
CN51	E40-9008-05	PIN CONNECTOR	15P		
CN52	E40-5021-05	PIN CONNECTOR	7P		
CN53	E40-5021-05	PIN CONNECTOR	7P		
CN56	E40-3237-05	PIN CONNECTOR	2P		
CN152	E40-3237-05	PIN CONNECTOR	2P		
CN201	E40-7566-05	PIN CONNECTOR	5P		
CN202	E40-7565-05	PIN CONNECTOR	3P		
CN203	E40-7566-05	PIN CONNECTOR	5P		
CN204	E40-7567-05	PIN CONNECTOR	7P		
CN208	E40-7567-05	PIN CONNECTOR	7P		
CN209	NO USE				
CN210	E40-7565-05	PIN CONNECTOR	3P		
CN211	E40-7565-05	PIN CONNECTOR	3P		
D101	1SS133	DIODE			
D102	1SS133	DIODE			
D151	1SS133	DIODE			
D152	1SS133	DIODE			
D153	1SS133	DIODE			
D154	1SS133	DIODE			
D155	1SS133	DIODE			
D201	1SS133	DIODE			
D202	1SS133	DIODE			
D251	1SS133	DIODE			
D252	1SS133	DIODE			
D253	1SS133	DIODE			
D254	1SS133	DIODE			
D255	1SS133	DIODE			
IC101	LT1097CN8	IC,OP-AMP			
IC201	LT1097CN8	IC,OP-AMP			
J1	E04-0259-05	COAXIAL CONNECTOR			
J2	E04-0259-05	COAXIAL CONNECTOR			
J3	E04-0259-05	COAXIAL CONNECTOR			
K101	S76-0027-05	RELAY			
K102	S76-0027-05	RELAY			
K103	S76-0027-05	RELAY			
K104	S76-0027-05	RELAY			
K105	S76-0027-05	RELAY			
K201	S76-0027-05	RELAY			
K202	S76-0027-05	RELAY			
K203	S76-0027-05	RELAY			
K204	S76-0027-05	RELAY			
K205	S76-0027-05	RELAY			
L101	L40-1011-70	FERRI INDUCTOR	100		
L201	L40-1011-70	FERRI INDUCTOR	100		
P1	E23-1520-05	EARTH TERMINAL			
P2	E23-1520-05	EARTH TERMINAL			
P3	E23-1520-05	EARTH TERMINAL			
P4	E23-1520-05	EARTH TERMINAL			
P5	E23-1520-05	EARTH TERMINAL			
P6	E23-1520-05	EARTH TERMINAL			
P7	E23-1520-05	EARTH TERMINAL			

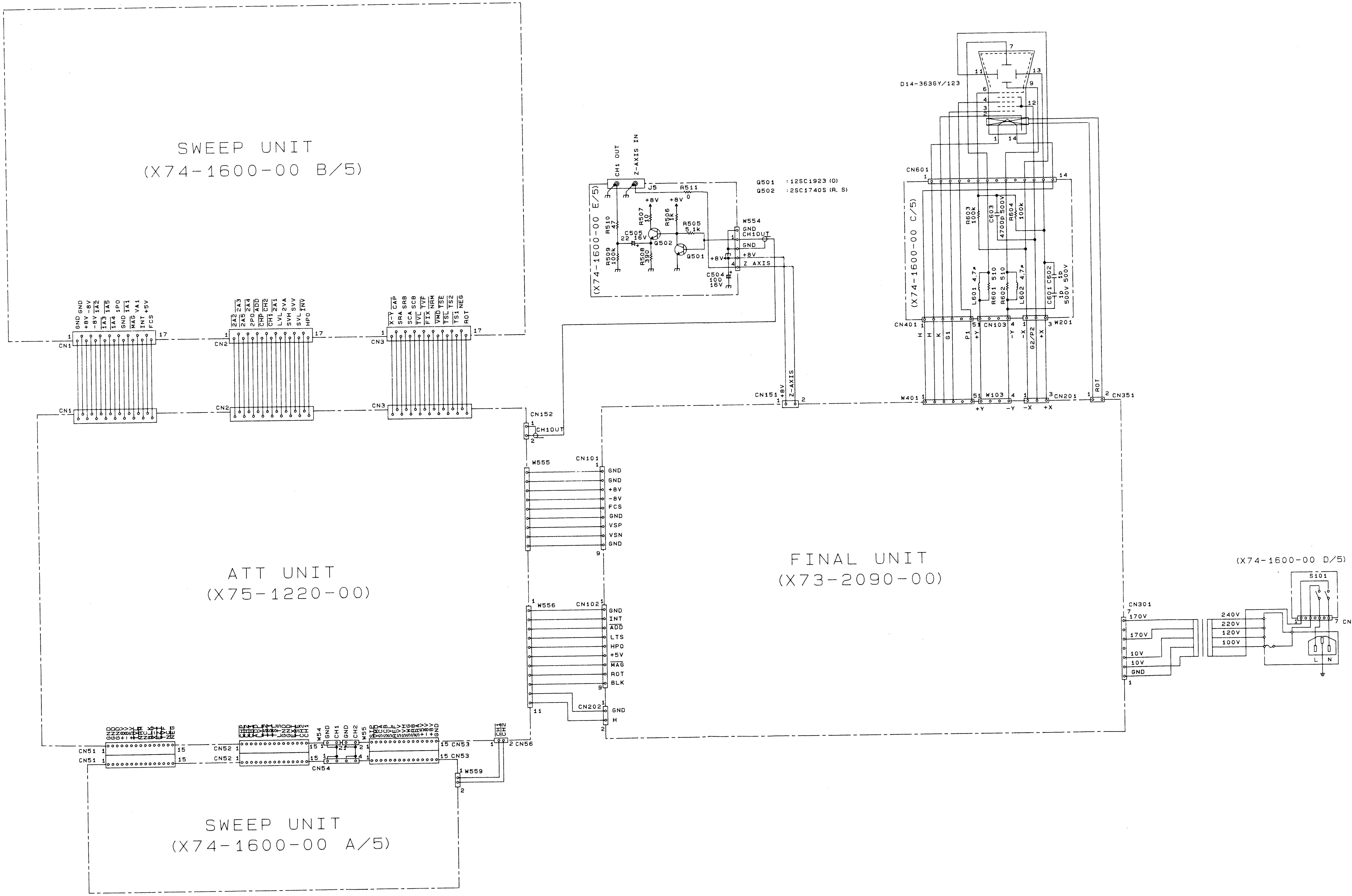
PARTS LIST

REF.NO	PARTS NO	NAME & DESCRIPTION			
Q101	2SK304(E)	FET, N-CHANNEL			
Q102	2SC1923(O)	TR. SI, NPN			
Q103	2SA933ASLN(R,S)	TR. SI, PNP			
Q104	2SA1005(K)	TR. SI, PNP			
Q105	2SC3779(D)	TR. SI, NPN			
Q106	2SC1740S(R,S)	TR. SI, NPN			
Q107	2SC3381(GR)	TR. SI, NPN			
Q108	2SC1923(O)	TR. SI, NPN			
Q109	3SK73(GR)	FET, N-CHANNEL			
Q110	IMX4	TR. SI, NPN			
Q111	2SC1907	TR. SI, NPN			
Q112	2SC1907	TR. SI, NPN			
Q113	2SC1906	TR. SI, NPN			
Q114	2SA1459(K)	TR. SI, PNP			
Q115	2SA1459(K)	TR. SI, PNP			
Q116	2SA1459(K)	TR. SI, PNP			
Q117	2SA1005(K)	TR. SI, PNP			
Q118	2SA1005(K)	TR. SI, PNP			
Q119	2SA933ASLN(R,S)	TR. SI, PNP			
Q120	2SA933ASLN(R,S)	TR. SI, PNP			
Q131	2SA1459(K)	TR. SI, PNP			
Q151	DTA114Y(S)	TR. SI, PNP			
Q152	DTA114Y(S)	TR. SI, PNP			
Q153	DTA114Y(S)	TR. SI, PNP			
Q154	DTA114Y(S)	TR. SI, PNP			
Q155	DTA114Y(S)	TR. SI, PNP			
Q201	2SK304(E)	FET, N-CHANNEL			
Q202	2SC1923(O)	TR. SI, NPN			
Q203	2SA933ASLN(R,S)	TR. SI, PNP			
Q204	2SA1005(K)	TR. SI, PNP			
Q205	2SC3779(D)	TR. SI, NPN			
Q206	2SC1740S(R,S)	TR. SI, NPN			
Q207	2SC3381(GR)	TR. SI, NPN			
Q208	2SC1923(O)	TR. SI, NPN			
Q209	3SK73(GR)	FET, N-CHANNEL			
Q210	IMX4	TR. SI, NPN			
Q211	2SC1907	TR. SI, NPN			
Q212	2SC1907	TR. SI, NPN			
Q213	2SC1906	TR. SI, NPN			
Q214	2SA1459(K)	TR. SI, PNP			
Q215	2SA1459(K)	TR. SI, PNP			
Q216	2SA1459(K)	TR. SI, PNP			
Q217	2SA1005(K)	TR. SI, PNP			
Q218	2SA1005(K)	TR. SI, PNP			
Q219	2SA933ASLN(R,S)	TR. SI, PNP			
Q220	2SA933ASLN(R,S)	TR. SI, PNP			
Q221	2SA1005(K)	TR. SI, PNP			
Q222	2SA1005(K)	TR. SI, PNP			
Q223	DTC114Y(S)	TR. SI, NPN			
Q224	2SA933ASLN(R,S)	TR. SI, PNP			
Q231	2SA933ASLN(R,S)	TR. SI, PNP			
Q251	DTA114Y(S)	TR. SI, PNP			
Q252	DTA114Y(S)	TR. SI, PNP			
Q253	DTA114Y(S)	TR. SI, PNP			
Q254	DTA114Y(S)	TR. SI, PNP			
Q255	DTA114Y(S)	TR. SI, PNP			
Q301	2SK161(GR)	FET, N-CHANNEL			
Q302	2SC1740S(R,S)	TR. SI, NPN			
Q303	2SC1740S(R,S)	TR. SI, NPN			
Q304	DTC114Y(S)	TR. SI, NPN			
Q305	2SC1740S(R,S)	TR. SI, NPN			
Q306	2SC1740S(R,S)	TR. SI, NPN			
Q307	2SK389(GR)	FET, N-CHANNEL			
Q308	2SC1740S(R,S)	TR. SI, NPN			
Q309	DTA114Y(S)	TR. SI, PNP			
Q310	2SC1740S(R,S)	TR. SI, NPN			
Q311	2SC1740S(R,S)	TR. SI, NPN			
Q312	2SC1740S(R,S)	TR. SI, NPN			
R1	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R2	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R3	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R100	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R101	NO USE				
R102	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R103	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R104	RN14BK2E9903D	RES. METAL FILM	990K	0.5%	1/4W
R105	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R106	RN14BK2C1012D	RES. METAL FILM	10.1K	0.5%	1/6W
R107	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R108	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R109	RN14BK2E9003D	RES. METAL FILM	900K	0.5%	1/4W
R110	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R111	RN14BK2C1113D	RES. METAL FILM	111K	0.5%	1/6W
R112	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R113	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W
R114	RD14BB2E684J	RES. CARBON	680K	5%	1/4W
R115	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R116	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R117	RD14BB2C202J	RES. CARBON	2K	5%	1/6W
R118	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R119	RD14BB2C273J	RES. CARBON	27K	5%	1/6W
R120	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R121	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R122	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R123	RD14BB2E272J	RES. CARBON	2.7K	5%	1/4W
R124	RD14BB2C162J	RES. CARBON	1.6K	5%	1/6W
R125	RN14BK2C3000D	RES. METAL FILM	300	0.5%	1/6W
R126	RN14BK2C1500D	RES. METAL FILM	150	0.5%	1/6W
R127	RN14BK2C90R0D	RES. METAL FILM	90.0	0.5%	1/6W
R128	RN14BK2C60R0D	RES. METAL FILM	60.0	0.5%	1/6W
R129	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R130	RD14BB2C390J	RES. CARBON	39	5%	1/6W
R131	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R132	RD14BB2C623J	RES. CARBON	62K	5%	1/6W
R133	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R134	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R135	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W
R136	NO USE				
R137	RN14BK2C1500F	RES. METAL FILM	150	1%	1/6W
R138	RN14BK2C1500F	RES. METAL FILM	150	1%	1/6W
R139	RD14BB2C302J	RES. CARBON	3K	5%	1/6W
R140	RD14BB2C152J	RES. CARBON	1.5K	5%	1/6W
R141	RN14BK2C6800F	RES. METAL FILM	680	1%	1/6W
R142	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R143	RD14BB2E822J	RES. CARBON	8.2K	5%	1/4W
R144	NO USE				
R145	R92-1061-05	JUMPING RES.	ZERO OHM(5MM)		
R146	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R147	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
R148	RD14BB2C912J	RES. CARBON	9.1K	5%	1/6W
R149	RD14BB2C390J	RES. CARBON	39	5%	1/6W
R150	NO USE				
R151	RN14BK2C3001F	RES. METAL FILM	3K	1%	1/6W
R152	RN14BK2C1001F	RES. METAL FILM	1K	1%	1/6W
R153	RN14BK2C1001F	RES. METAL FILM	1K	1%	1/6W
R154	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R155	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R156	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R157	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R158	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R159	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R160	RN14BK2C1601F	RES. METAL FILM	1.6K	1%	1/6W
R161	RN14BK2C1601F	RES. METAL FILM	1.6K	1%	1/6W
R162	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R163	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
R164	RD14BB2C181J	RES. CARBON	180	5%	1/6W
R165	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R166	RD14BB2C113J	RES. CARBON	11K	5%	1/6W
R167	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R168	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R169	RD14BB2C752J	RES. CARBON	7.5K	5%	1/6W
R170	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R171	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R172	RD14BB2C112J	RES. CARBON	1.1K	5%	1/6W
R173	RD14BB2C242J	RES. CARBON	2.4K	5%	1/6W
R174	RD14BB2C561J	RES. CARBON	560	5%	1/6W
R175	RD14BB2C822J	RES. CARBON	8.2K	5%	1/6W
R176	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R177	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R178	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R179	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R180	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R181	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R182	RD14BB2C680J	RES. CARBON	68	5%	1/6W
R183	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R184	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R185	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R186	NO USE				
R187	RD14BB2C513J	RES. CARBON	51K	5%	1/6W
R188	NO USE				
R189	RD14BB2C363J	RES. CARBON	36K	5%	1/6W
R190	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R191	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R192	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R193	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R194	RD14BB2E221J	RES. CARBON	220	5%	1/4W
R195	RD14BB2E221J	RES. CARBON	220	5%	1/4W
R198	RD14BB2C622J	RES. CARBON	6.2K	5%	1/6W
R199	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R200	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R201	NO USE				
R202	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R203	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R204	RN14BK2E9903D	RES. METAL FILM	990K	0.5%	1/4W
R205	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R206	RN14BK2C1012D	RES. METAL FILM	10.1K	0.5%	1/6W
R207	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R208	RD14BB2C220J	RES. CARBON	22	5%	1/6W
R209	RN14BK2E9003D	RES. METAL FILM	900K	0.5%	1/4W
R210	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R211	RN14BK2C1113D	RES. METAL FILM	111K	0.5%	1/6W
R212	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R213	RN14BK2C5003F	RES. METAL FILM	500K	1%	1/6W

PARTS LIST

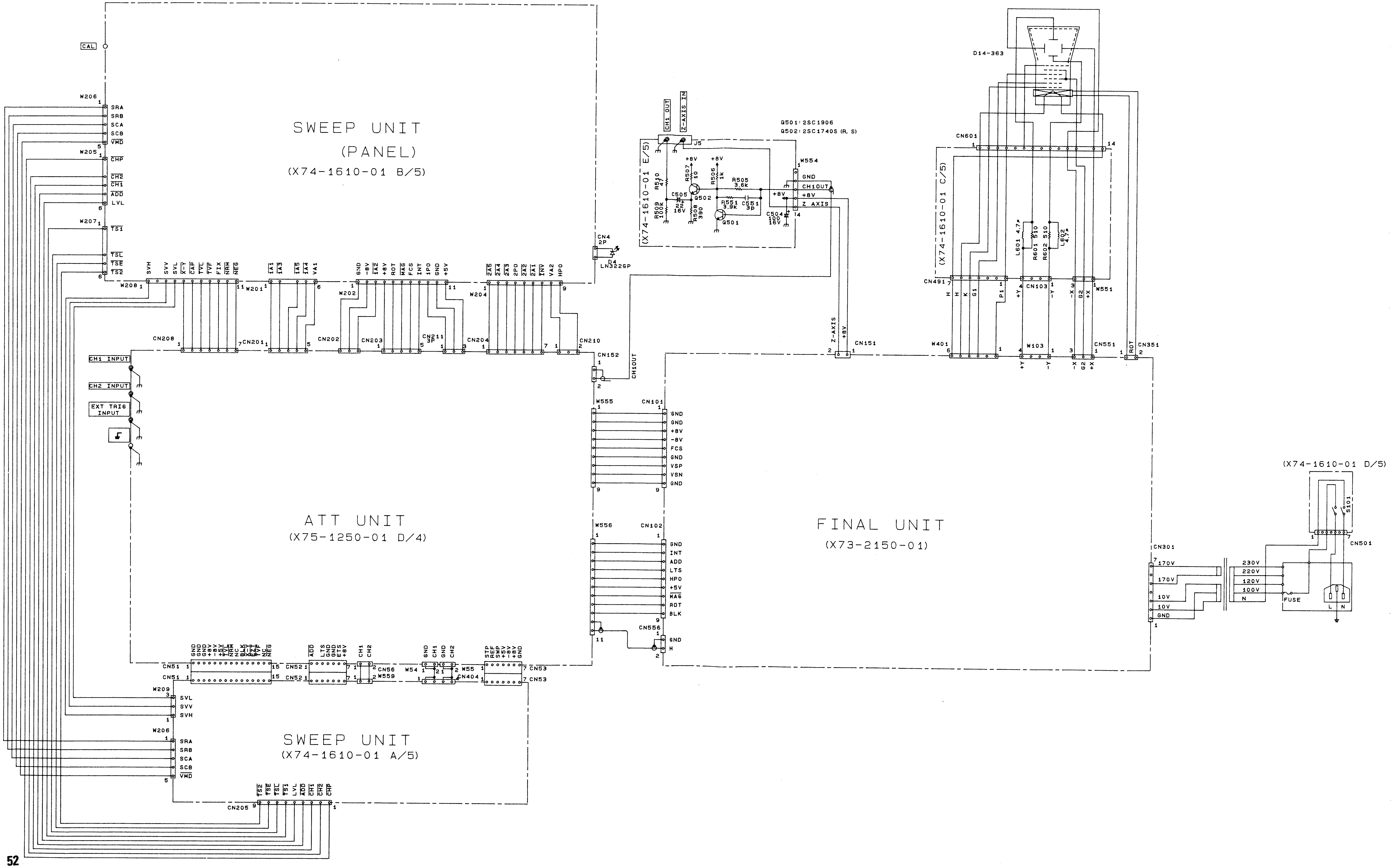
REF.NO	PARTS NO	NAME & DESCRIPTION
R214	RD14BB2E684J	RES. CARBON 680K 5% 1/4W
R215	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R216	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R217	RD14BB2C202J	RES. CARBON 2K 5% 1/6W
R218	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R219	RD14BB2C273J	RES. CARBON 27K 5% 1/6W
R220	RD14BB2C622J	RES. CARBON 6.2K 5% 1/6W
R221	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R222	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R223	RD14BB2E272J	RES. CARBON 2.7K 5% 1/4W
R224	RD14BB2C162J	RES. CARBON 1.6K 5% 1/6W
R225	RN14BK2C3000D	RES. METAL FILM 300 0.5% 1/6W
R226	RN14BK2C1500D	RES. METAL FILM 150 0.5% 1/6W
R227	RN14BK2C90R0D	RES. METAL FILM 90.0 0.5% 1/6W
R228	RN14BK2C60R0D	RES. METAL FILM 60.0 0.5% 1/6W
R229	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R230	RD14BB2C390J	RES. CARBON 39 5% 1/6W
R231	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R232	RD14BB2C623J	RES. CARBON 62K 5% 1/6W
R233	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R234	RD14BB2C241J	RES. CARBON 240 5% 1/6W
R235	RN14BK2C5003F	RES. METAL FILM 500K 1% 1/6W
R236	NO USE	
R237	RN14BK2C1500F	RES. METAL FILM 150 1% 1/6W
R238	RN14BK2C1500F	RES. METAL FILM 150 1% 1/6W
R239	RD14BB2C302J	RES. CARBON 3K 5% 1/6W
R240	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R241	RN14BK2C6800F	RES. METAL FILM 680 1% 1/6W
R242	R92-1061-05	JUMPING RES. ZERO OHM(5MM)
R243	RD14BB2E822J	RES. CARBON 8.2K 5% 1/4W
R244	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R245	R92-1061-05	JUMPING RES. ZERO OHM(5MM)
R246	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R247	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R248	RD14BB2C912J	RES. CARBON 9.1K 5% 1/6W
R249	RD14BB2C390J	RES. CARBON 39 5% 1/6W
R250	RD14BB2C513J	RES. CARBON 51K 5% 1/6W
R251	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R252	RN14BK2C1001F	RES. METAL FILM 1K 1% 1/6W
R253	RN14BK2C1001F	RES. METAL FILM 1K 1% 1/6W
R254	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R255	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R256	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R257	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R258	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R259	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R260	RN14BK2C1601F	RES. METAL FILM 1.6K 1% 1/6W
R261	RN14BK2C1601F	RES. METAL FILM 1.6K 1% 1/6W
R262	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R263	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R264	RN14BK2C2200F	RES. METAL FILM 220 1% 1/6W
R265	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R266	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
R267	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R268	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R269	RD14BB2C752J	RES. CARBON 7.5K 5% 1/6W
R270	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R271	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R272	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R273	RD14BB2C752J	RES. CARBON 7.5K 5% 1/6W
R274	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R275	RD14BB2C822J	RES. CARBON 8.2K 5% 1/6W
R276	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R277	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R278	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R279	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
R280	RD14BB2C220J	RES. CARBON 22 5% 1/6W
R281	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R282	NO USE	
R283	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R284	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R285	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R286	RD14BB2C750J	RES. CARBON 75 5% 1/6W
R287	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R288	RD14BB2C680J	RES. CARBON 68 5% 1/6W
R289	RD14BB2C363J	RES. CARBON 36K 5% 1/6W
R290	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R291	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R292	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R293	RD14BB2E221J	RES. CARBON 220 5% 1/4W
R294	RD14BB2E221J	RES. CARBON 220 5% 1/4W
R295	RD14BB2E221J	RES. CARBON 220 5% 1/4W
R296	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R297	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R298	RD14BB2C622J	RES. CARBON 6.2K 5% 1/6W
R299	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R300	NO USE	
R301	RD14BB2E105J	RES. CARBON 1M 5% 1/4W
R302	RD14BB2E684J	RES. CARBON 680K 5% 1/4W
R303	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R304	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R305	RD14BB2C152J	RES. CARBON 1.5K 5% 1/6W
R306	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R307	NO USE	
R308	RN14BK2C3001F	RES. METAL FILM 3K 1% 1/6W
R309	RN14BK2C3901F	RES. METAL FILM 3.9K 1% 1/6W
R310	RN14BK2C3301F	RES. METAL FILM 3.3K 1% 1/6W
R311	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R312	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R313	NO USE	
R314	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R315	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R316	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R317	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R318	RN14BK2C3901F	RES. METAL FILM 3.9K 1% 1/6W
R319	RN14BK2C1802F	RES. METAL FILM 18K 1% 1/6W
R320	RN14BK2C1301F	RES. METAL FILM 1.3K 1% 1/6W
R321	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R322	NO USE	
R323	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R324	RD14BB2C431J	RES. CARBON 430 5% 1/6W
R325	RD14BB2C511J	RES. CARBON 510 5% 1/6W
R326	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R327	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R328	RD14BB2C112J	RES. CARBON 1.1K 5% 1/6W
R329	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R330	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R331	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R332	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R333	NO USE	
R334	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R335	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R336	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R351	RD14BB2C113J	RES. CARBON 11K 5% 1/6W
S101	S64-0603-15	LEVER SWITCH
S201	S64-0603-15	LEVER SWITCH
TC101	C05-0496-05	CAP. TRIMMER 10P
TC102	C05-0495-05	CAP. TRIMMER 6P
TC103	C05-0495-05	CAP. TRIMMER 6P
TC104	C05-0495-05	CAP. TRIMMER 6P
TC105	C05-0447-05	CAP. TRIMMER 50P
TC201	C05-0496-05	CAP. TRIMMER 10P
TC202	C05-0495-05	CAP. TRIMMER 6P
TC203	C05-0495-05	CAP. TRIMMER 6P
TC204	C05-0495-05	CAP. TRIMMER 6P
TC205	C05-0447-05	CAP. TRIMMER 50P
TH103	112-201-2FM	THERMISTOR
TH202	112-103-2FM	THERMISTOR
TH203	112-201-2FM	THERMISTOR
VR101	R12-3584-05	RES. SEMI FIXED 47KB
VR102	R12-3582-05	RES. SEMI FIXED 10KB
VR103	R12-0869-05	RES. SEMI FIXED 100 B
VR104	R12-1589-05	RES. SEMI FIXED 1KB
VR105	R12-0869-05	RES. SEMI FIXED 100 B
VR201	R12-3584-05	RES. SEMI FIXED 47KB
VR202	R12-3582-05	RES. SEMI FIXED 10KB
VR203	R12-0869-05	RES. SEMI FIXED 100 B
VR204	R12-1589-05	RES. SEMI FIXED 1KB
VR205	R12-3584-05	RES. SEMI FIXED 47KB
VR206	R12-0869-05	RES. SEMI FIXED 100 B
VR301	R12-3585-05	RES. SEMI FIXED 10KB
VR302	R12-0873-05	RES. SEMI FIXED 470 B
VR303	R12-3582-05	RES. SEMI FIXED 10KB
W555	E38-1159-05	WIRE ASS'Y:ATT TO FINAL
W556	E38-1161-05	WIRE ASS'Y;ATT TO FINAL
W557	E38-1162-05	WIRE ASS'Y;WITH W 558
W902	E38-1327-05	WIRE ASS'Y;CH1,CH2 GND
W903	E38-1327-05	WIRE ASS'Y;CH1,CH2 GND

CS-4125 (~S/NO.7121000) SCHEMATIC DIAGRAM



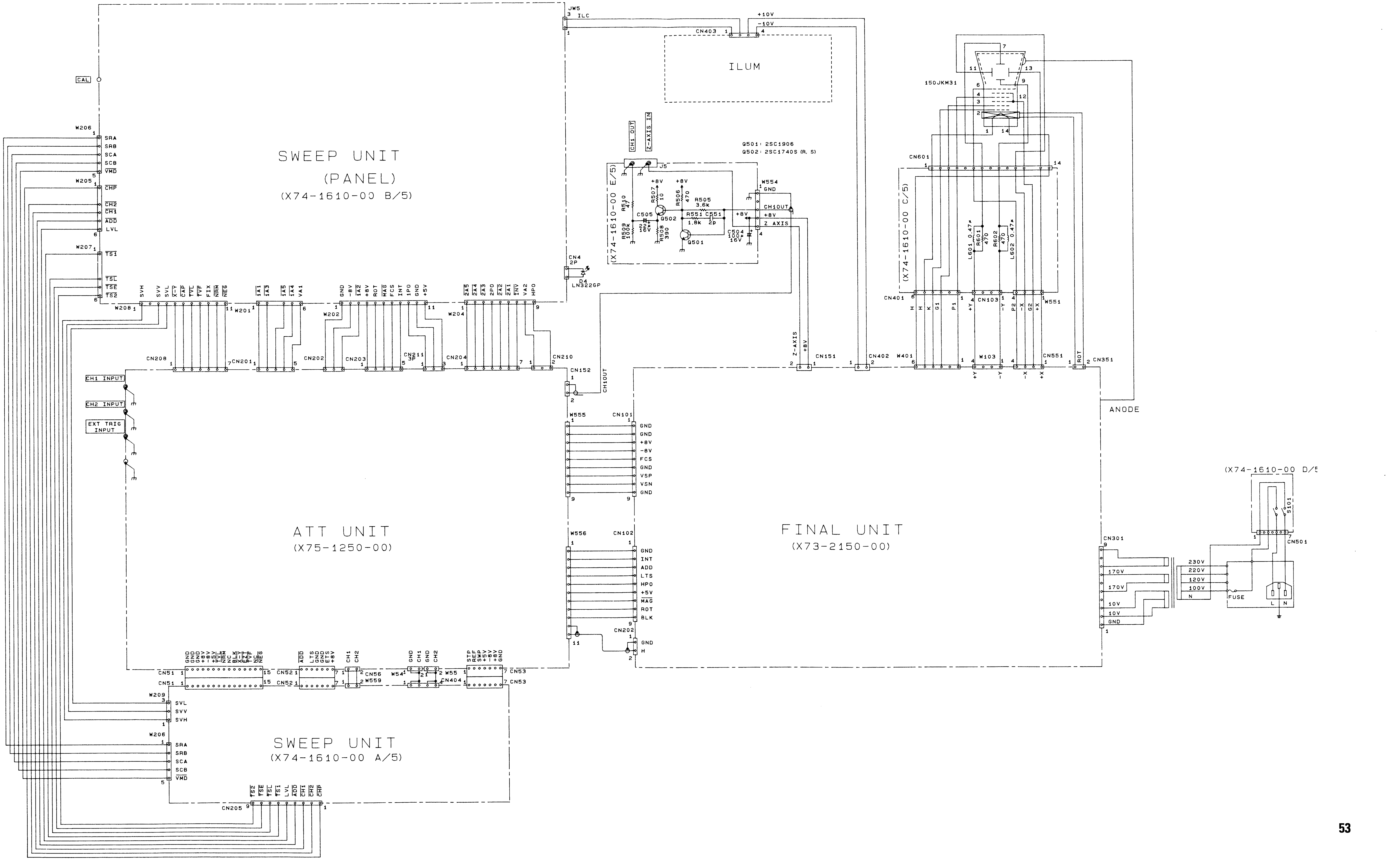
SWEEP UNIT
(X74-1600-00 B/5)
CN1
CN2
CN3
GND GND +8V -8V +8V 1A2 1A3 1A5 1A4 1PO GND 1A1 MAG VA1 INT +5V FCS
2A2 2A3 2A5 2A4 2PO ADD CHP CH2 CH1 2A1 LVL 2VA SVH SVV SVL INV HPO
X-Y CAP SRA SRB SCA SCB TVL TVF FIX NRM VMD TSE TSL TS2 TS1 NEG ROT
CH1 OUT
Z-AXIS IN
J5
(X74-1600-00 E/5)
R511 0
R510 47
R507 10
R506 1k
R505 5.1k
C505 22 16V
Q502
Q501
R509 100k
R508 390
C504 100 16V
+8V
W554
GND
CH1OUT
GND
+8V
Z AXIS
Q501 : 2SC1923 (O)
Q502 : 2SC1740S (R, S)
D14-363GY/123
CN601
(X74-1600-00 C/5)
R603 100k
C603 4700p 500V
R604 100k
L601 4.7μ
R601 510
R602 510
L602 4.7μ
C601 1p 500V
C602 1p 500V
CN401
CN103
W201
H H K G1 P1 +Y -Y -X G2/P2 +X
ROT
CN151
+8V Z-AXIS
W401
W103
CN201
CN351
+Y -Y -X +X
CN152
CH1OUT
W555
CN101
GND GND +8V -8V FCS GND VSP VSN GND
FINAL UNIT
(X73-2090-00)
ATT UNIT
(X75-1220-00)
W556
CN102
GND INT ADD LTS HPO +5V MAG ROT BLK
CN202
GND
H
(X74-1600-00 D/5)
S101
CN301
CN501
170V 170V 10V 10V GND
240V 220V 120V 100V
L N
CN51
CN52
CN53
CN54
CN56
W54
W55
W559
CH1 CH2
SWEEP UNIT
(X74-1600-00 A/5)

CS-4125 SCHEMATIC DIAGRAM



SWEEP UNIT (PANEL)
(X74-1610-01 B/5)
CAL
W206
SRA
SRB
SCA
SCB
VMD
W205
CHP
CH2
CH1
ADD
LVL
W207
TS1
TSL
TSE
TS2
CN4 2P
D4 LN3226P
W208
SVH
SVV
SVL
X-Y
CAP
TVL
TVF
FIX
NRM
NEG
W201
1A1
1A3
1A5
1A4
VA1
W202
GND
-8V
1A2
+8V
ROT
MAG
FCS
1PO
GND
+5V
W204
2A5
2A4
2A3
2PO
2A2
2A1
INV
VA2
HPO
CN208
CN201
CN202
CN203
CN211 3P
CN204
CN210
CN152
CH1OUT
CH1 INPUT
CH2 INPUT
EXT TRIG INPUT
ATT UNIT
(X75-1250-01 D/4)
W555
CN101
GND
GND
+8V
-8V
FCS
GND
VSP
VSN
GND
W556
CN102
GND
INT
ADD
LTS
HPO
+5V
MAG
ROT
BLK
CN556
GND
H
CN51
CN52
CN56
W559
W54
CN404
W55
CN53
GND
GND
GND
+8V
-8V
+5V
TVL
NRM
NC
BLK
ADD
LTS
GND
ETS
+8V
CH1
CH2
STP
REF
SWP
+5V
+8V
GND
W209
SVL
SVV
SVH
SWEEP UNIT
(X74-1610-01 A/5)
CN205
TS2
TSE
TS1
LVL
ADD
CH1
CH2
CHP
CH1 OUT
Z-AXIS IN
J5
(X74-1610-01 E/5)
Q501: 2SC1906
Q502: 2SC1740S (R, S)
R510 47
R509 100k
R507 10
R508 390
C505 22μ 16V
Q502
R506 1k
R505 3.6k
R551 3.9K
C551 3P
Q501
C504 100 16V
W554
GND
CH1OUT
+8V
Z AXIS
Z-AXIS
+8V
CN151
FINAL UNIT
(X73-2150-01)
D14-363
CN601
(X74-1610-01 C/5)
L601 4.7μ
R601 510
R602 510
L602 4.7μ
CN491
H
K
G1
P1
+Y
CN103
-Y
-X
G2
+X
W551
W401
W103
CN551
ROT
CN351
(X74-1610-01 D/5)
S101
CN501
CN301
170V
170V
10V
10V
GND
230V
220V
120V
100V
N
FUSE
L
N

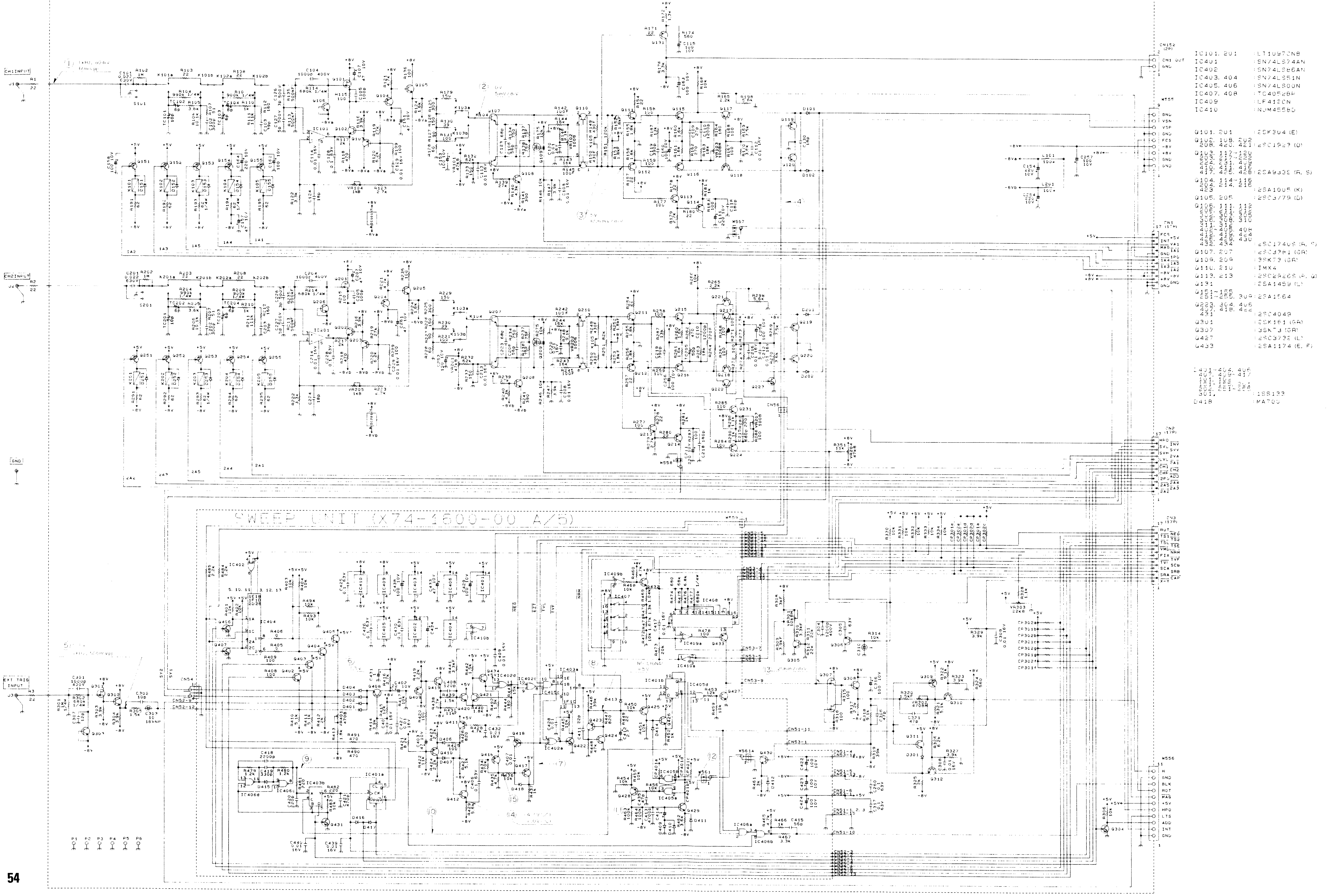
CS-4135 SCHEMATIC DIAGRAM



SWEEP UNIT
(PANEL)
(X74-1610-00 B/5)
ATT UNIT
(X75-1250-00)
FINAL UNIT
(X73-2150-00)
SWEEP UNIT
(X74-1610-00 A/5)
ILUM
(X74-1610-00 E/5)
(X74-1610-00 C/5)
(X74-1610-00 D/5)
CAL
CH1 INPUT
CH2 INPUT
EXT TRIG INPUT
CH1 OUT
Z-AXIS IN
Q501: 2SC1906
Q502: 2SC1740S (R, S)
150JKM31
ANODE
LN322GP
JW5
ILC
+10V
-10V
CN403
W206
SRA
SRB
SCA
SCB
VMD
W205
CHP
CH2
CH1
ADD
LVL
W207
TS1
TSL
TSE
TS2
W208
SVH
SVV
SVL
X-Y
CAP
TVL
TVF
FIX
NRM
NEG
W201
1A1
1A3
1A5
1A4
VA1
W202
GND
-8V
1A2
+8V
ROT
MAG
FCS
INT
1PO
+5V
W204
2A5
2A4
2A3
2PO
2A2
2A1
INV
VA2
HPO
CN208
CN201
CN202
CN203
CN211
3P
CN204
CN210
CN152
CH1OUT
CN4
2P
D4
J5
R510
47
R509
100k
C505
R507
10
R506
470
R505
3.6k
R551
1.8k
C551
2p
C504
100
16V
R508
390
Q502
Q501
W554
GND
CH1OUT
+8V
Z AXIS
Z-AXIS
CN151
CN402
W401
CN601
CN401
H
K
G1
P1
+Y
-Y
P2
-X
G2
+X
CN103
W551
W103
CN551
ROT
CN351
R601
470
L601 0.47
R602
470
L602 0.47
W555
CN101
VSP
VSN
W556
CN102
LTS
BLK
CN202
CN301
170V
10V
230V
220V
120V
100V
N
FUSE
L
S101
CN501
CN51
CN52
CN56
W559
W54
W55
CN404
CN53
ETS
NC
STP
REF
SWP
W209
CN205

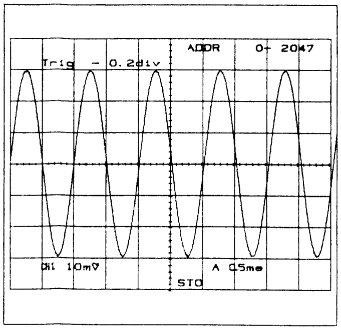
ATTENUATOR UNIT (X75-1220-00)

CS-4125 (~S/NO.7121000) SCHEMATIC DIAGRAM


CH1 INPUT
CH2 INPUT
GND
EXT TRIG INPUT
SWEEP UNIT (X74-1600-00 A/5)
CN152 (2P)
CH1 OUT
CN1 (17P)
CN2 (17P)
CN3 (17P)
W556
P1 P2 P3 P4 P5 P6

IC101, 201	:LT1097CN8
IC401	:SN74LS74AN
IC402	:SN74LS86AN
IC403, 404	:SN74LS51N
IC405, 406	:SN74LS00N
IC407, 408	:TC4052BP
IC409	:LF412CN
IC410	:NJM4558D
Q101, 201	:2SK304 (E)
Q102, 108, 202 208, 420, 421	:2SC1923 (O)
Q103, 117~120 203, 217~222 224, 231, 409 410, 411, 416 417, 425, 428	:2SA933S (R, S)
Q104, 114~116 204, 214, 216 423	:2SA1005 (K)
Q105, 205	:2SC3779 (D)
Q106, 111, 112 206, 211, 212 302, 303, 305 306, 308, 310 311, 312 402~405, 408 412, 419, 424 426, 429, 430 432, 434	:2SC1740S (R, S)
Q107, 207	:2SC3381 (GR)
Q109, 209	:3SK73 (GR)
Q110, 210	:IMX4
Q113, 213	:2SC2926S (P, Q)
Q131	:2SA1459 (L)
Q151~155 251~255, 309	:2SA1564
Q223, 304, 406 407, 418, 422 431	:2SC4049
Q301	:2SK161 (GR)
Q307	:3SK73 (GR)
Q427	:2SC3732 (L)
Q433	:2SA1174 (E, F)
D401~404, 406 407, 409~417 101, 102 151~155, 201 202, 251~255 301,	:1SS133
D418	:MA700

①



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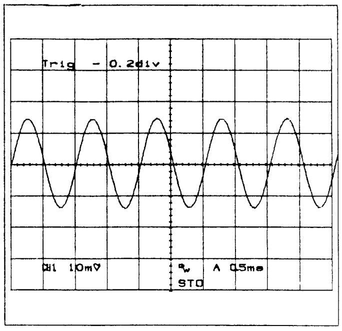

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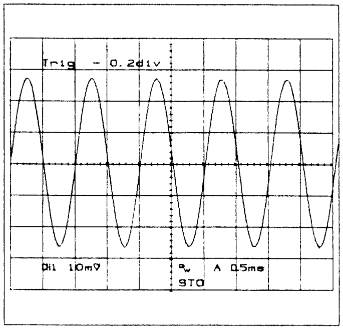
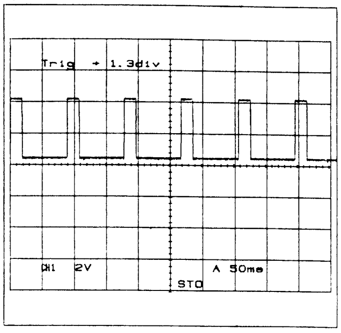
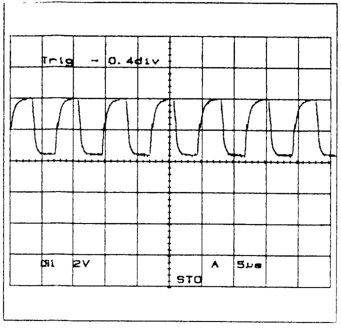


④ 1/2 ALT



④ 2/2 CHOP



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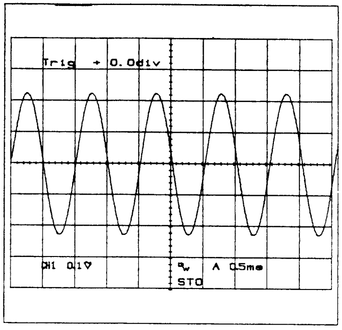

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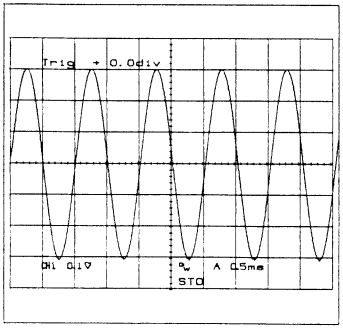
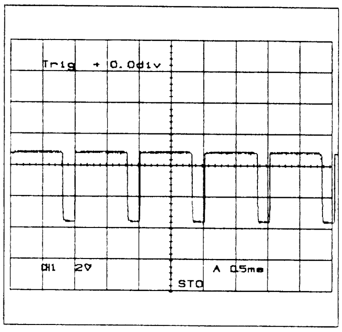
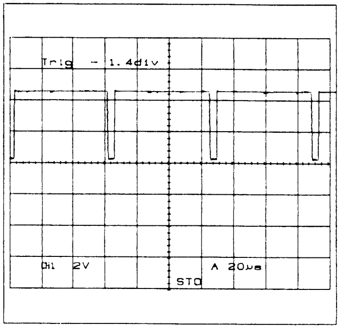


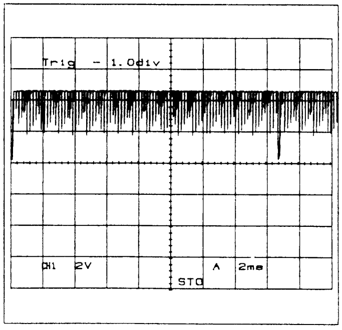
⑦ 1/3



⑦ 2/3



⑦ 3/3



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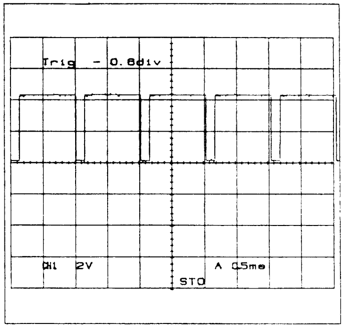
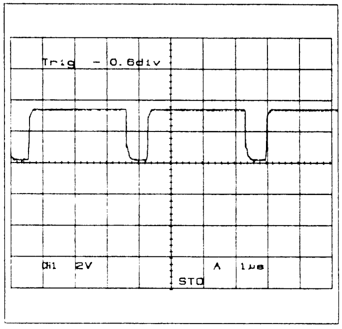
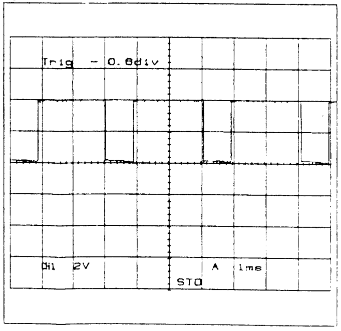


⑨ CHOP



⑩ CHOP



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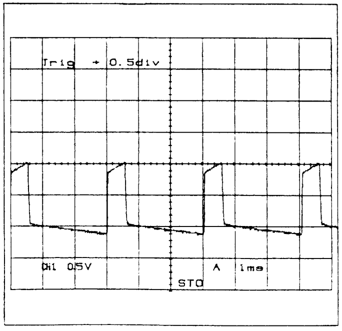
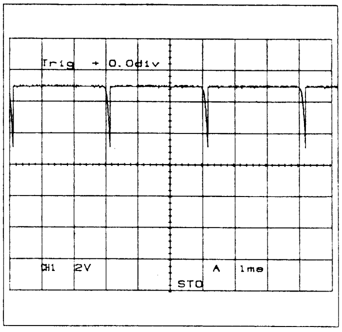
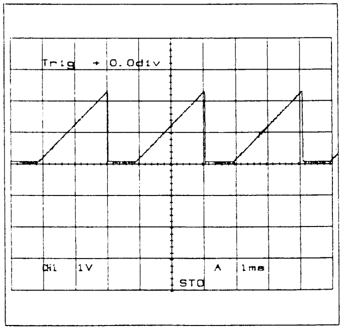


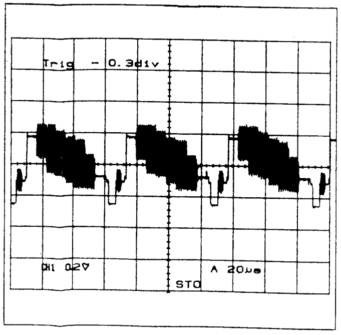
⑫



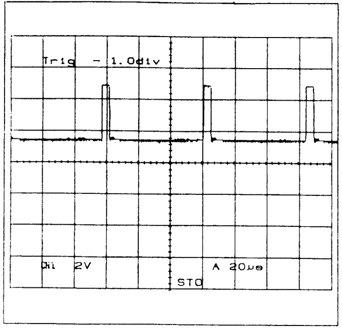
⑬



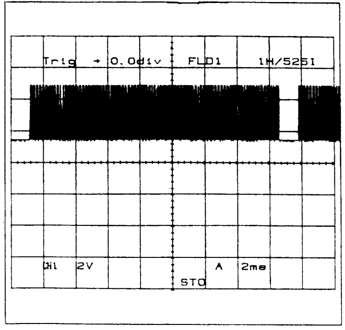
⑭



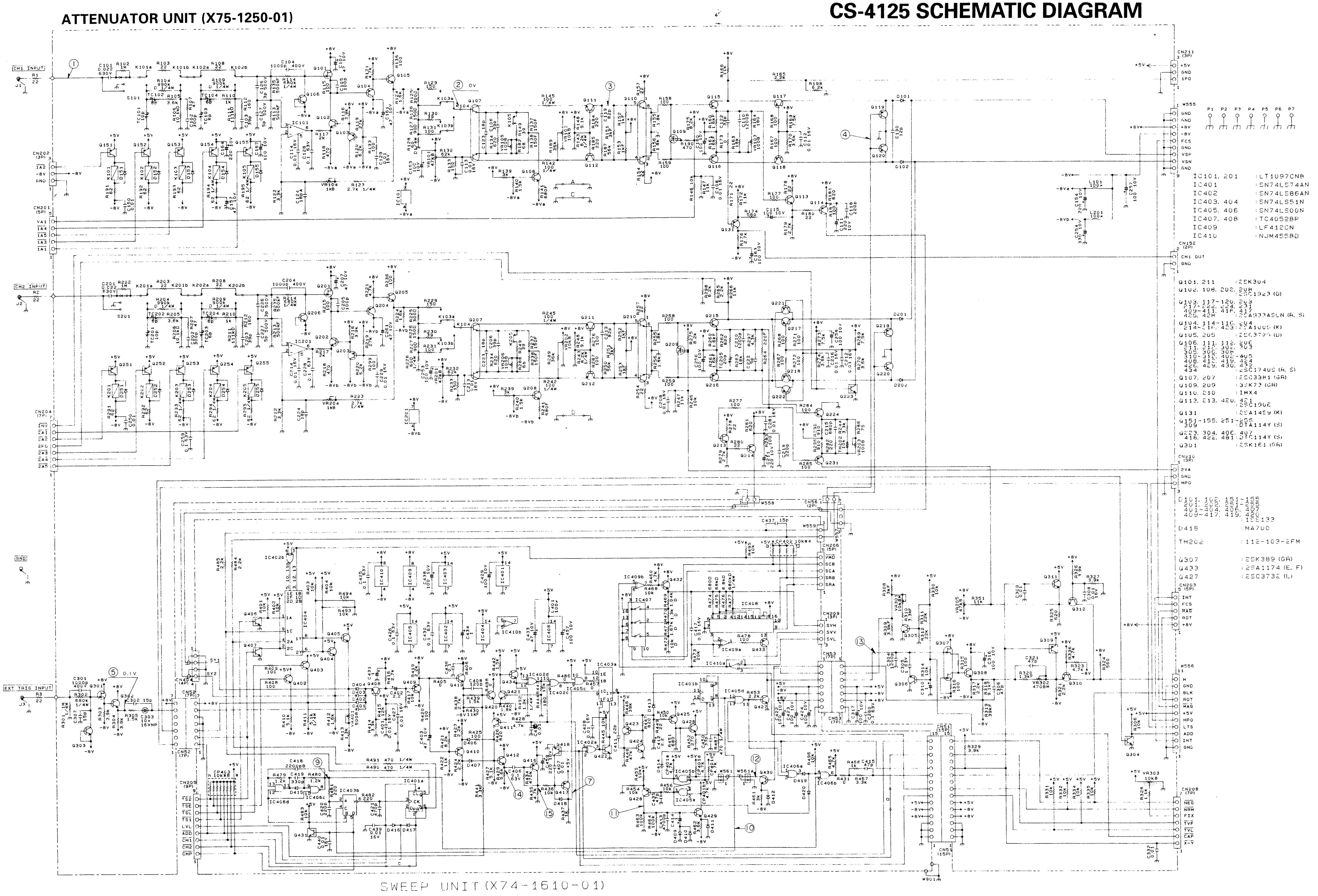
⑮ 1/2 TV-L



⑮ 2/2 TV-F

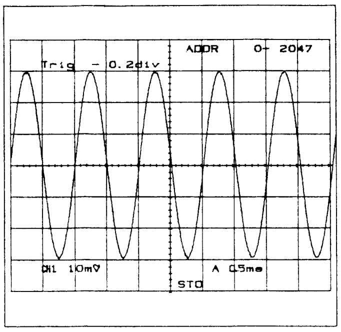


CS-4125 SCHEMATIC DIAGRAM

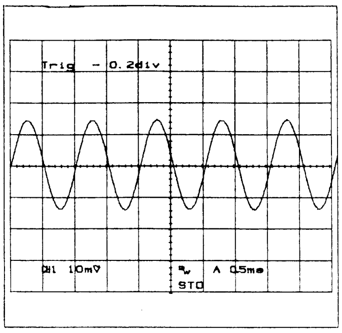

ATTENUATOR UNIT (X75-1250-01)
SWEEP UNIT (X74-1610-01)
CH1 INPUT
CH2 INPUT
EXT TRIG INPUT
GND
CH1 OUT
CN202 (3P)
CN201 (5P)
CN204 (7P)
CN211 (3P)
CN152 (2P)
CN210 (3P)
CN203 (5P)
CN205 (9P)
CN206 (5P)
CN208 (7P)
CN209 (3P)
CN5 (15P)
P1
P2
P3
P4
P5
P6
P7

IC101, 201	:LT1097CN8
IC401	:SN74LS74AN
IC402	:SN74LS86AN
IC403, 404	:SN74LS51N
IC405, 406	:SN74LS00N
IC407, 408	:TC4052BP
IC409	:LF412CN
IC410	:NJM4558D
Q101, 211	:2SK304
Q102, 108, 202, 208	:2SC1923 (O)
Q103, 117~120, 203 217~222, 224, 231 409~411, 416, 417 425, 428	:2SA933ASLN (R, S)
Q104, 114~116, 204 214~216, 423	:2SA1005 (K)
Q105, 205	:2SC3779 (D)
Q106, 111, 112, 206 211, 212, 302, 303 305, 306, 308 310~312, 402~405 408, 412, 419, 424 426, 429, 430, 432 434	:2SC1740S (R, S)
Q107, 207	:2SC3381 (GR)
Q109, 209	:3SK73 (GR)
Q110, 210	:IMX4
Q113, 213, 420, 421	:2SC1906
Q131	:2SA1459 (K)
Q151~155, 251~255 309	:DTA114Y (S)
Q223, 304, 406, 407 416, 422, 481	:DTC114Y (S)
Q301	:2SK161 (GR)
D101, 102, 151~155 201, 202, 251~255 401~404, 406, 407 409~417, 419, 420	:1SS133
D418	:MA700
TH202	:112-103-2FM
Q307	:2SK389 (GR)
Q433	:2SA1174 (E, F)
Q427	:2SC3732 (L)

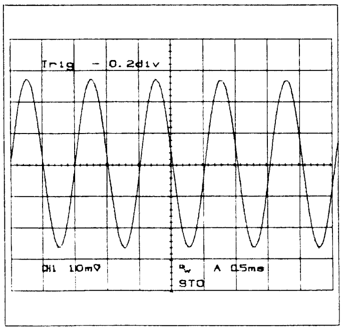
①



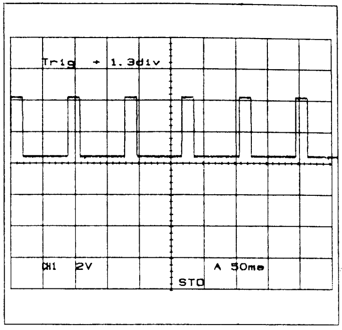
②



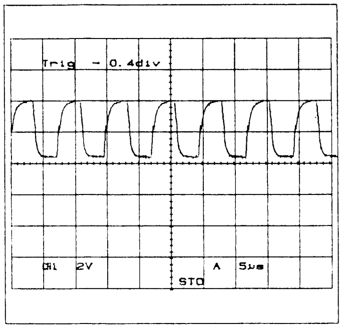
③



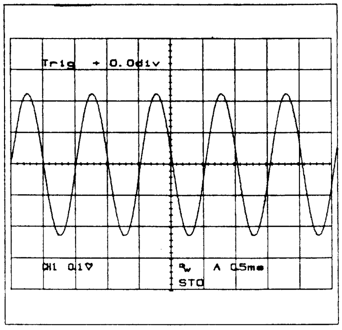
④ 1/2 ALT



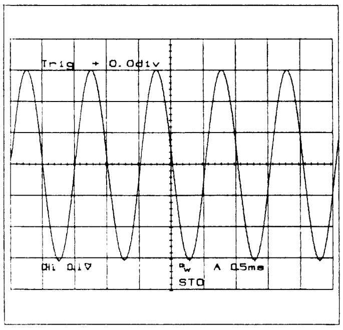
④ 2/2 CHOP



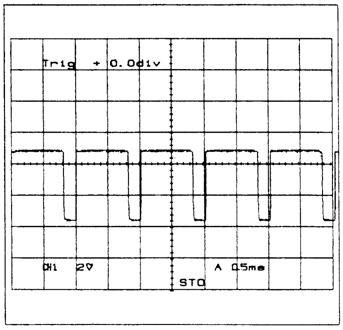
⑤



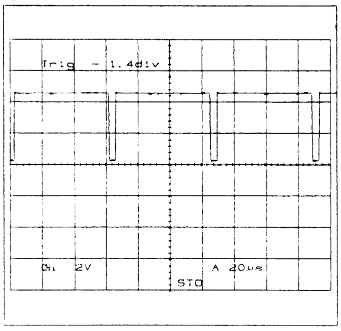
⑥



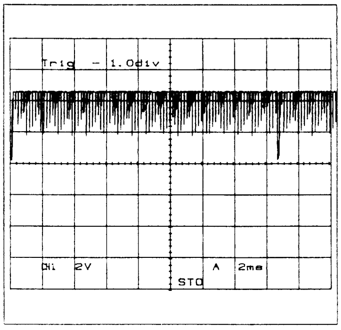
⑦ 1/3



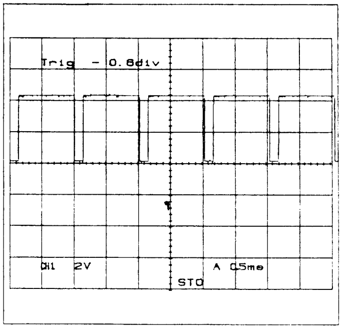
⑦ 2/3



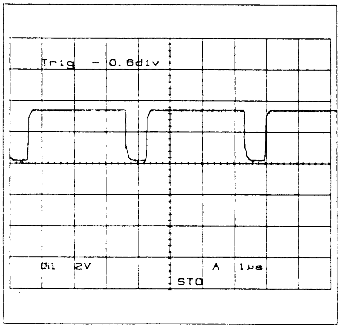
⑦ 3/3



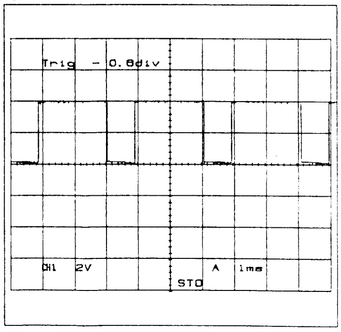
⑧



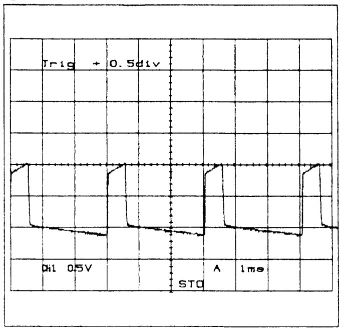
⑨ CHOP



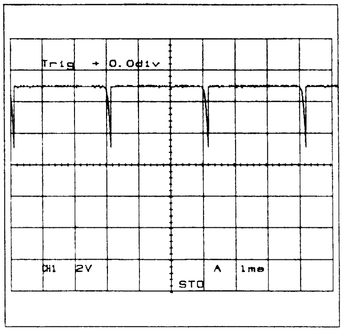
⑩ CHOP



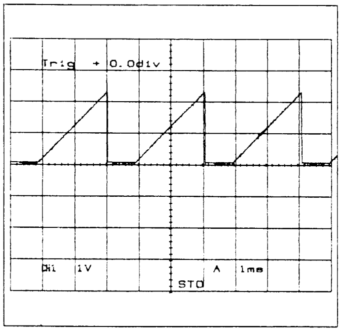
⑪



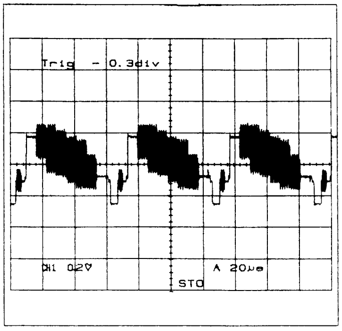
⑫



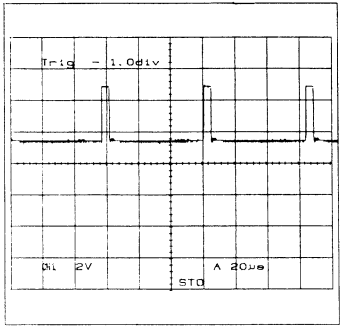
⑬



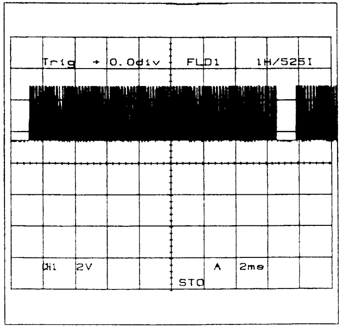
⑭



⑮ 1/2 TV-L

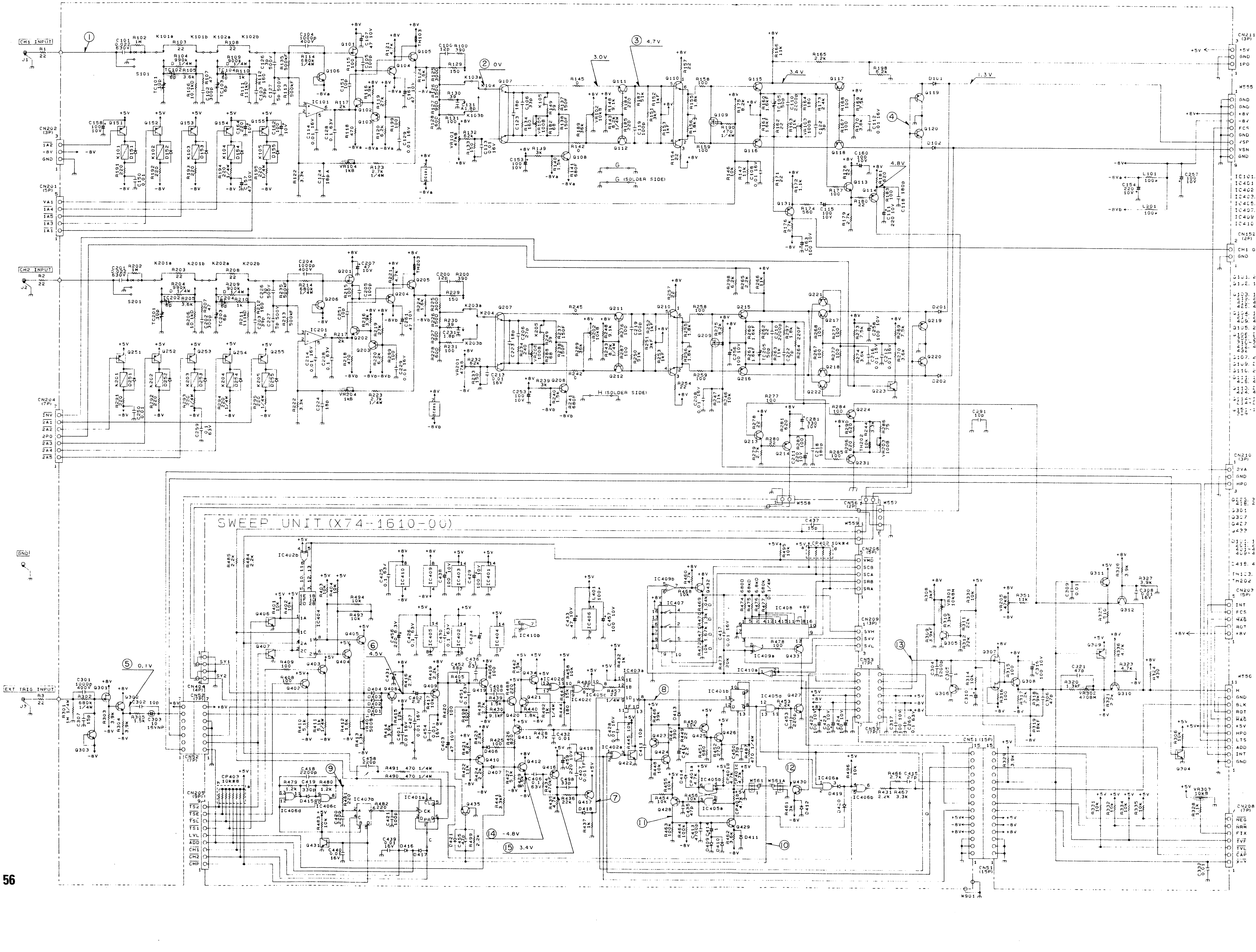


⑮ 2/2 TV-F

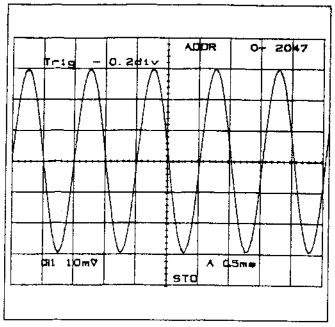


ATTENUATOR UNIT (X75-1250-00)

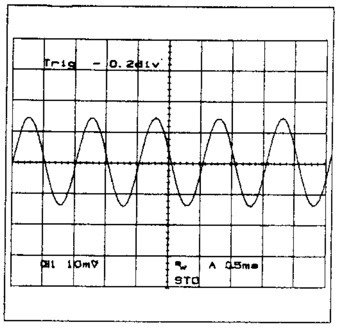
CS-4135 SCHEMATIC DIAGRAM


CH1 INPUT
CH2 INPUT
EXT TRIG INPUT
GND
SWEEP UNIT (X74-1610-00)
IC101, 201 :LT1097CN8
IC401 :SN74LS74AN
IC402 :SN74LS86AN
IC403, 404 :SN74LS51N
IC405, 406 :SN74LS00N
IC407, 408 :TC4052BP
IC409 :LF412CN
IC410 :NJM4558D
CN152 (2P)
CH1 OUT
GND
Q101, 201 :2SK304 (E)
Q102, 106, 202, 206 :2SC1923 (O)
Q103, 119, 120, 203, 219, 220, 224, 231, 410, 411, 416, 417, 425, 426 :2SA933ASLN (R, S)
Q104, 117, 118, 204, 217, 218, 221, 222, 409, 423 :2SA1005 (K)
Q105, 205 :2SC3779 (D)
Q107, 207 :2SC3381 (GR)
Q109, 209 :3SK73 (GR)
Q110, 210 :IMX4
Q111, 112, 211, 212, 408, 419 :2SC1907
Q113, 213, 420, 421, 424, 434, 435 :2SC1906
Q114~116, 131, 214~216 :2SA1459 (K)
Q151~155, 251~255, 309 :DTA114Y (S)
CN210 (3P)
2VA
GND
HPO
Q223, 304, 406, 407, 418, 422, 431 :DTC114Y (S)
Q301 :2SK161 (GR)
Q307 :2SK389 (GR)
Q427 :2SC3732 (L)
Q433 :2SA1174 (E,F)
1SS133
D415, 421 :MA700
TH103, 203 :112-201-2FM
TH202 :112-103-2FM
CN211 (3P)
CN202 (3P)
CN201 (5P)
CN204 (7P)
CN206 (5P)
CN209 (3P)
CN207 (5P)
CN208 (7P)
CN52 (7P)
CN51 (15P)
CN53 (7P)
CN404 (4P)
CN205 (9P)
① ② 0V ③ 4.7V ④ ⑤ 0.1V ⑥ 4.5V ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ -4.8V ⑮ 3.4V
3.0V
3.4V
1.3V
4.8V
G (SOLDER SIDE)
H (SOLDER SIDE)

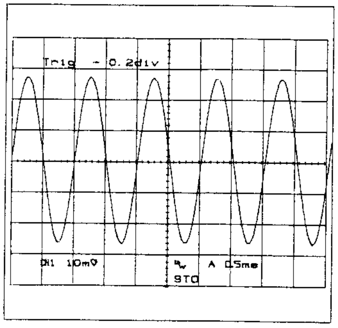
①



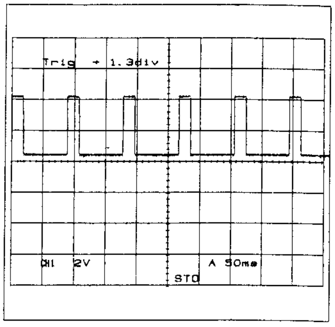
②



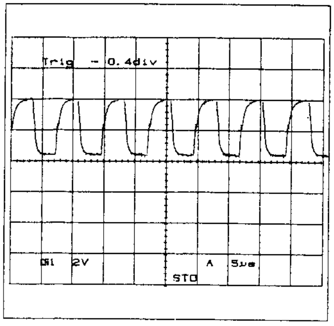
③



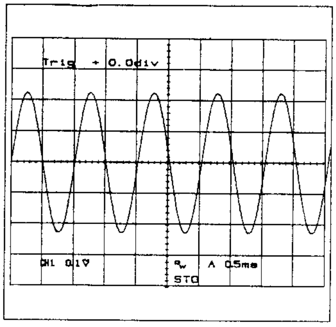
④ 1/2 ALT



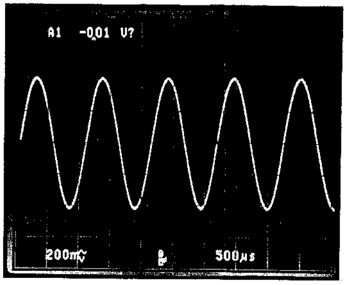
④ 2/2 CHOP



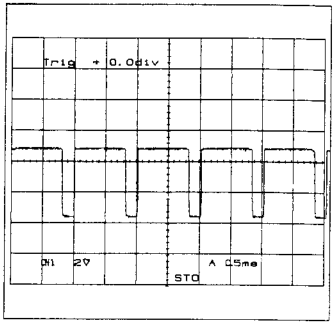
⑤



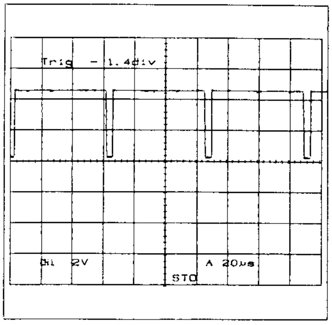
⑥



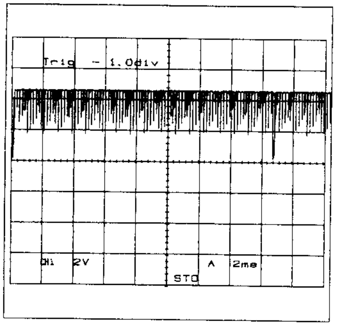
⑦ 1/3



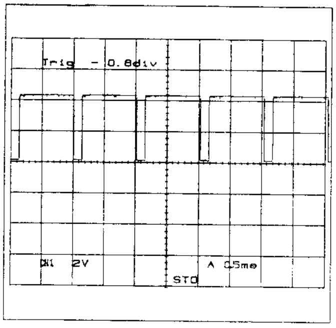
⑦ 2/3



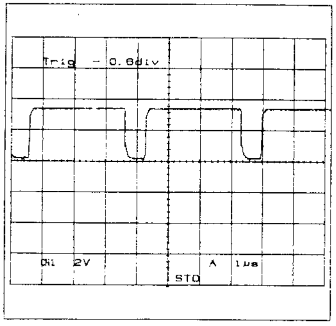
⑦ 3/3



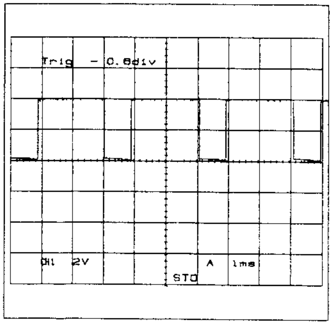
⑧



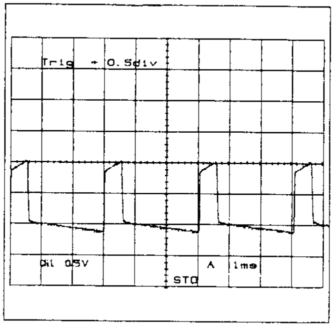
⑨ CHOP



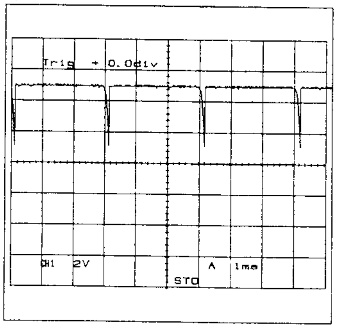
⑩ CHOP



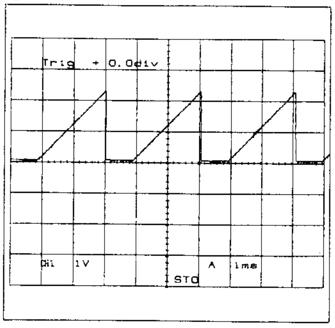
⑪



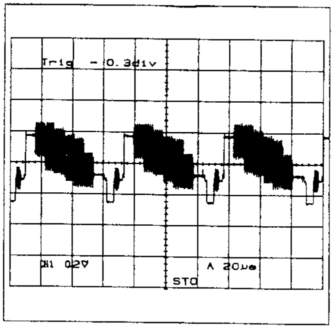
⑫



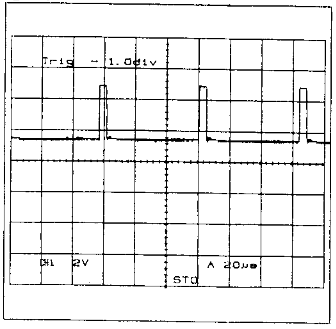
⑬



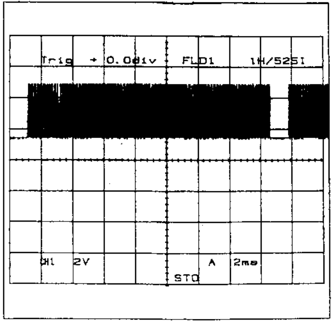
⑭



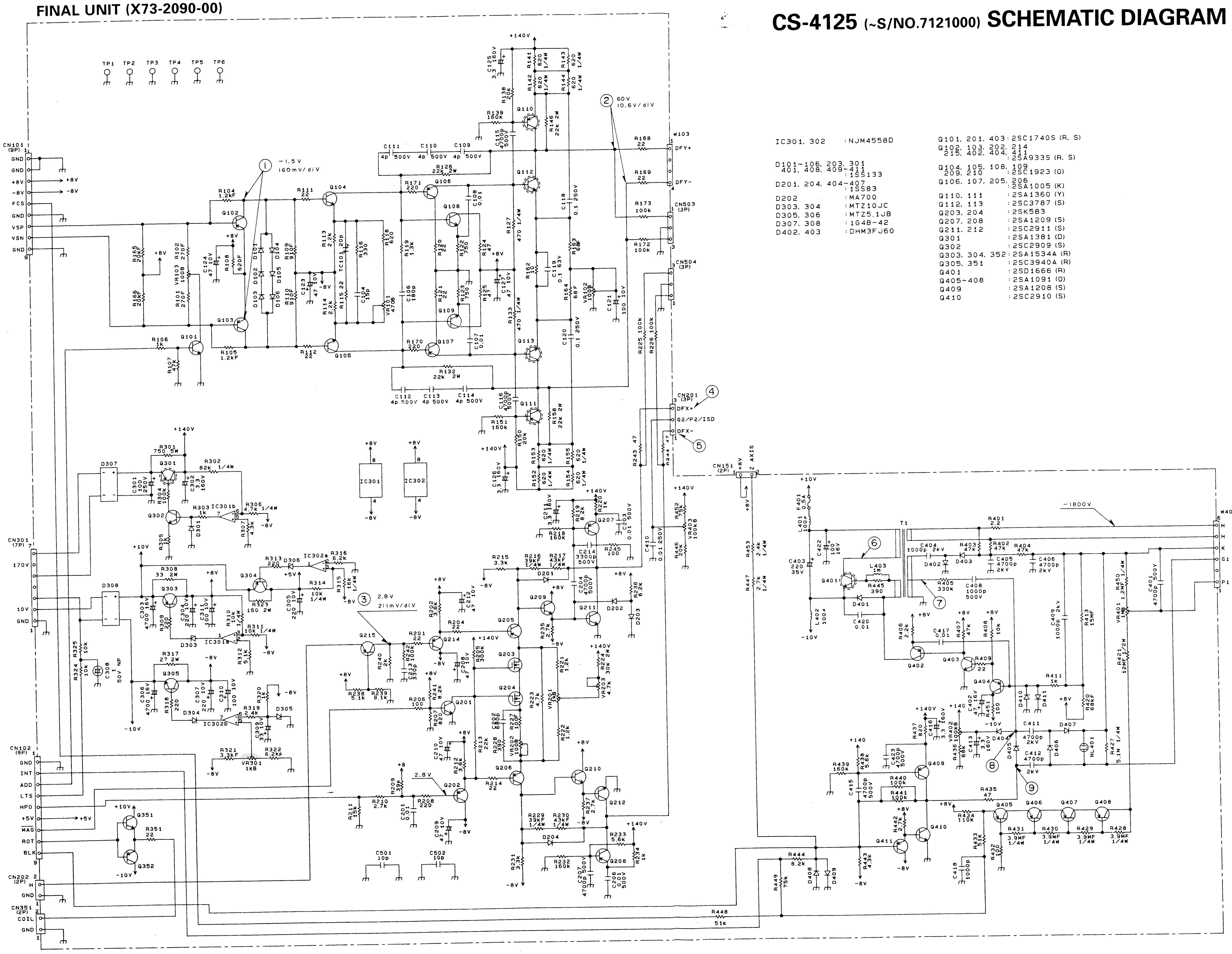
⑮ 1/2 TV-L



⑮ 2/2 TV-F



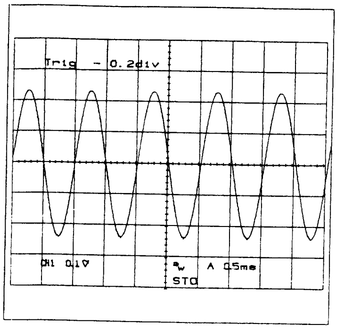
CS-4125 (~S/NO.7121000) SCHEMATIC DIAGRAM


FINAL UNIT (X73-2090-00)
TP1 TP2 TP3 TP4 TP5 TP6
CN101 (9P)
GND
GND
+8V
-8V
FCS
GND
VSP
VSN
GND
① -1.5V 160mV/div
② 60V 10.6V/div
③ 2.8V 211mV/div
④
⑤
⑥
⑦
⑧
⑨
+140V
W103
DFY+
DFY-
CN503 (3P)
CN504 (3P)
CN201 (3P)
DFX+
G2/P2/ISD
DFX-
CN301 (7P)
170V
10V
GND
CN102 (9P)
GND
INT
ADD
LTS
HPO
+5V
MAG
ROT
BLK
CN202 (2P)
H
GND
CN351 (2P)
COIL
GND
CN151 (2P)
+8V
Z AXIS
IC301
IC302
T1
W401
H
H
K
G1
P1
-1800V
+10V
-10V
2.8V

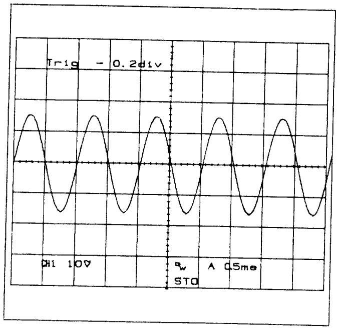
IC301, 302	:NJM4558D
D101~106, 203, 301 401, 408, 409~411	:1SS133
D201, 204, 404~407	:1SS83
D202	:MA700
D303, 304	:MTZ10JC
D305, 306	:MTZ5.1JB
D307, 308	:1G4B-42
D402, 403	:DHM3FJ60

Q101, 201, 403	:2SC1740S (R, S)
Q102, 103, 202, 214 215, 402, 404, 411	:2SA933S (R, S)
Q104, 105, 108, 109 209, 210	:2SC1923 (O)
Q106, 107, 205, 206	:2SA1005 (K)
Q110, 111	:2SA1360 (Y)
Q112, 113	:2SC3787 (S)
Q203, 204	:2SK583
Q207, 208	:2SA1209 (S)
Q211, 212	:2SC2911 (S)
Q301	:2SA1381 (D)
Q302	:2SC2909 (S)
Q303, 304, 352	:2SA1534A (R)
Q305, 351	:2SC3940A (R)
Q401	:2SD1666 (R)
Q405~408	:2SA1091 (O)
Q409	:2SA1208 (S)
Q410	:2SC2910 (S)

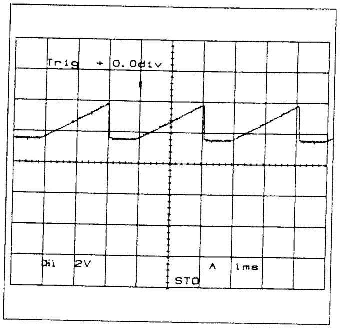
①


Trig - 0.2div
CH1 0.1V
A 0.5ms
STO

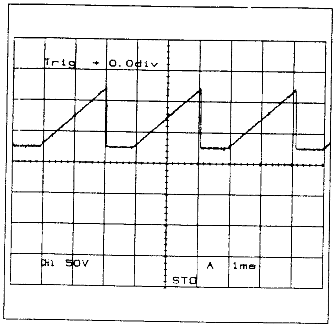
②


Trig - 0.2div
CH1 10V
A 0.5ms
STO

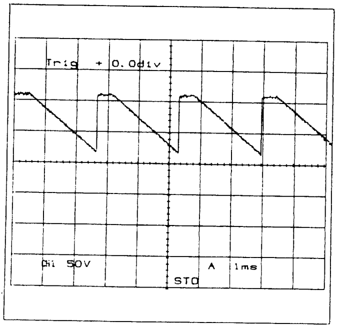
③


Trig + 0.0div
CH1 2V
A 1ms
STO

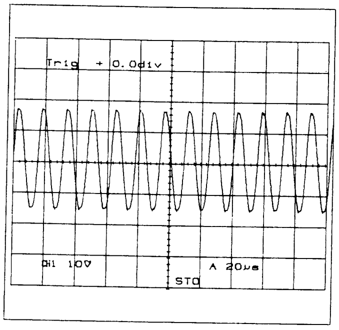
④


Trig + 0.0div
CH1 50V
A 1ms
STO

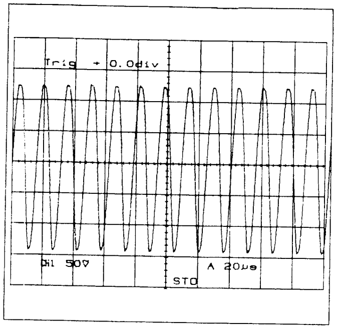
⑤


Trig + 0.0div
CH1 50V
A 1ms
STO

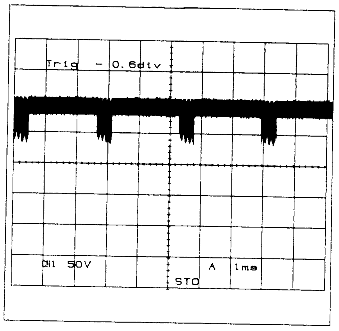
⑥


Trig + 0.0div
CH1 10V
A 20μs
STO

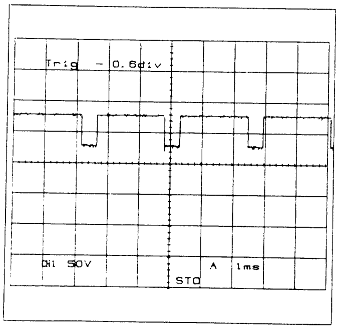
⑦


Trig + 0.0div
CH1 50V
A 20μs
STO

⑧

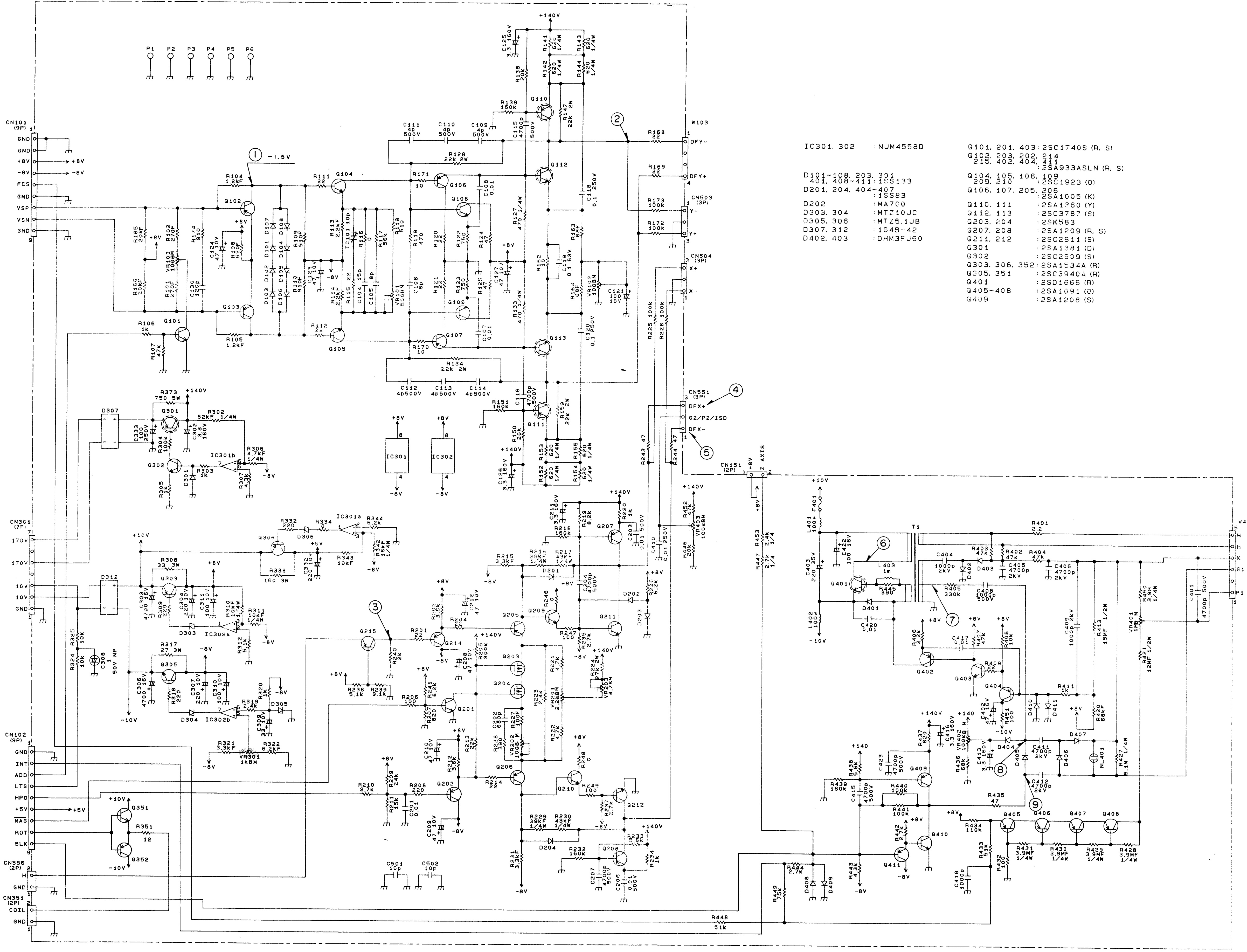

Trig - 0.6div
CH1 50V
A 1ms
STO

⑨


Trig - 0.6div
CH1 50V
A 1ms
STO

CS-4125 SCHEMATIC DIAGRAM

FINAL UNIT (X73-2150-01)

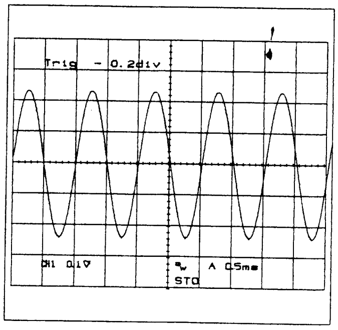

CN101 (9P)
GND
GND
+8V
-8V
FCS
GND
VSP
VSN
GND
P1 P2 P3 P4 P5 P6
① -1.5V
②
③
④
⑤
⑥
⑦
⑧
⑨
+140V
W103
DFY-
DFY+
CN503 (3P)
Y-
Y+
CN504 (3P)
X+
X-
CN551 (3P)
DFX+
G2/P2/ISD
DFX-
CN151 (2P)
Z AXIS
IC301
IC302
IC301a
IC301b
IC302a
IC302b
CN301 (7P)
170V
170V
10V
10V
GND
CN102 (9P)
GND
INT
ADD
LTS
HPD
+5V
MAG
ROT
BLK
CN556 (2P)
H
GND
CN351 (2P)
COIL
GND
T1
W401
H
H
K
G1
P1
R448 51k
+10V
-10V

IC301, 302 :NJM4558D

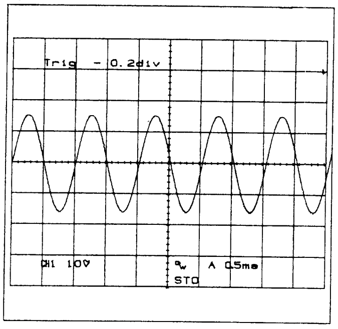
D101~108, 203, 301
401, 408~411 :1SS133
D201, 204, 404~407
:1SS83
D202 :MA700
D303, 304 :MTZ10JC
D305, 306 :MTZ5.1JB
D307, 312 :1G4B-42
D402, 403 :DHM3FJ60

Q101, 201, 403 :2SC1740S (R, S)
Q102, 203, 202, 214
215, 402, 404, 411
:2SA933ASLN (R, S)
Q104, 105, 108, 109
209, 210 :2SC1923 (O)
Q106, 107, 205, 206
:2SA1005 (K)
Q110, 111 :2SA1360 (Y)
Q112, 113 :2SC3787 (S)
Q203, 204 :2SK583
Q207, 208 :2SA1209 (R, S)
Q211, 212 :2SC2911 (S)
Q301 :2SA1381 (D)
Q302 :2SC2909 (S)
Q303, 306, 352 :2SA1534A (R)
Q305, 351 :2SC3940A (R)
Q401 :2SD1666 (R)
Q405~408 :2SA1091 (O)
Q409 :2SA1208 (S)

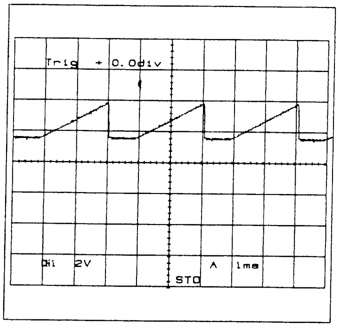
①


Trig - 0.2div
CH1 0.1V
A 0.5ms
STO

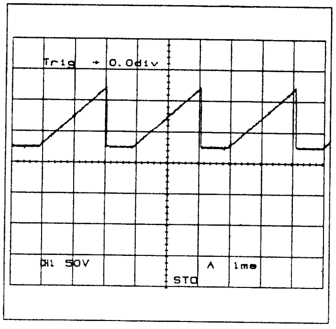
②


Trig - 0.2div
CH1 10V
A 0.5ms
STO

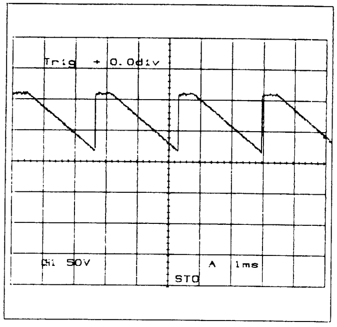
③


Trig + 0.0div
CH1 2V
A 1ms
STO

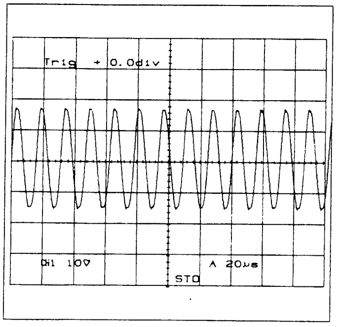
④


Trig + 0.0div
CH1 50V
A 1ms
STO

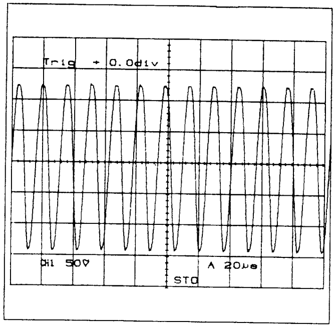
⑤


Trig + 0.0div
CH1 50V
A 1ms
STO

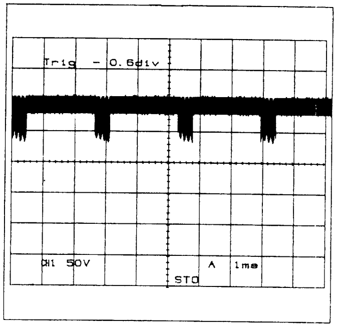
⑥


Trig + 0.0div
CH1 10V
A 20µs
STO

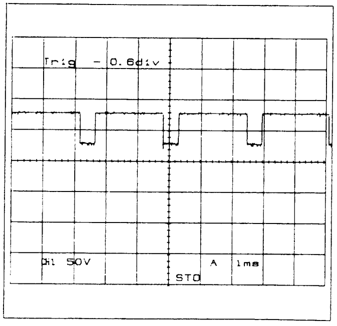
⑦


Trig + 0.0div
CH1 50V
A 20µs
STO

⑧

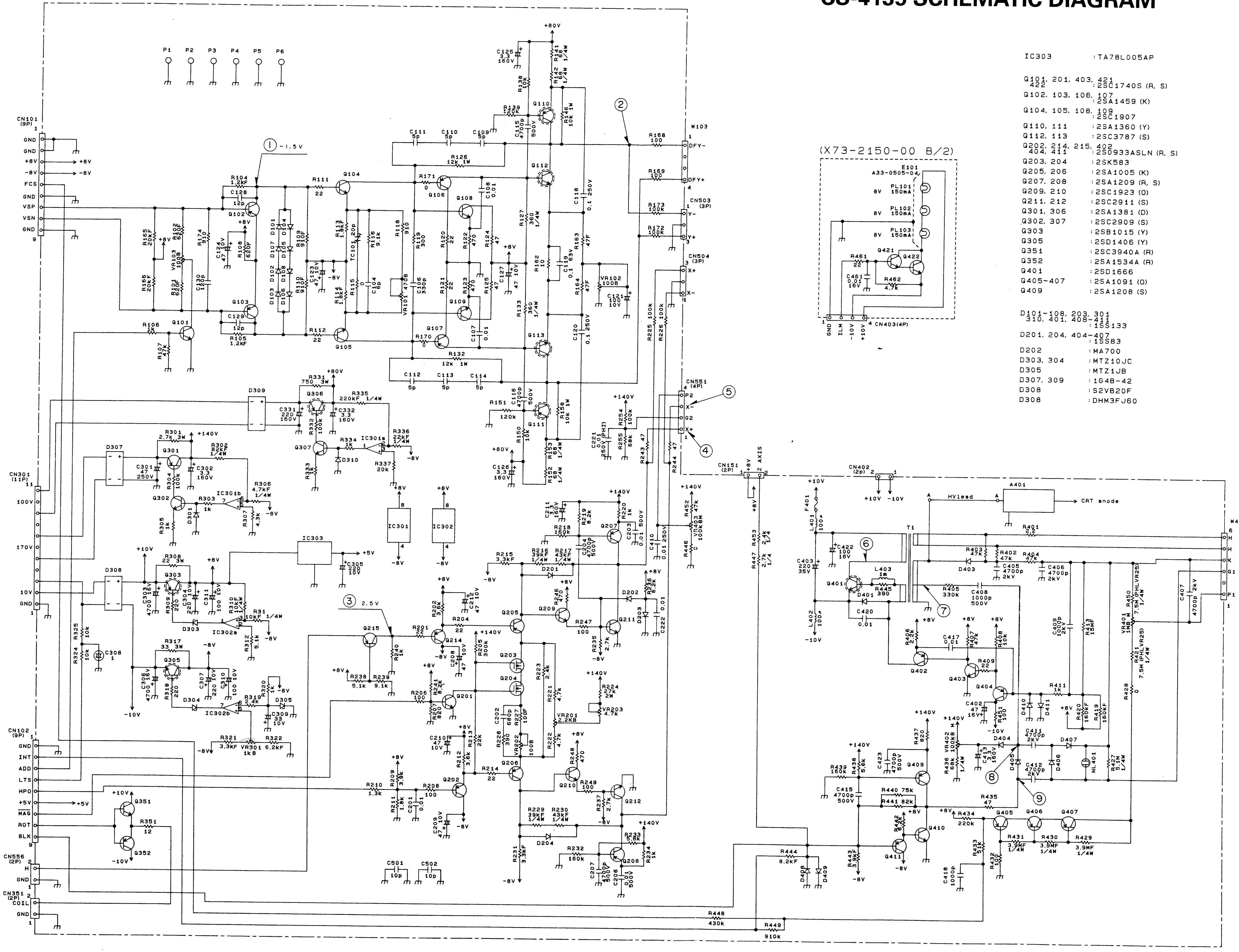

Trig - 0.6div
CH1 50V
A 1ms
STO

⑨


Trig - 0.6div
CH1 50V
A 1ms
STO

CS-4135 SCHEMATIC DIAGRAM

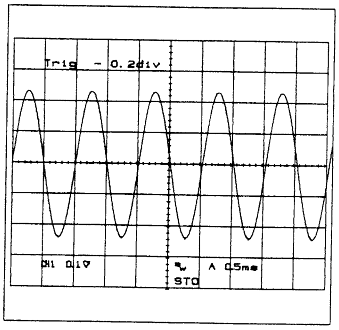
FINAL UNIT (X73-2150-00 A / 2)



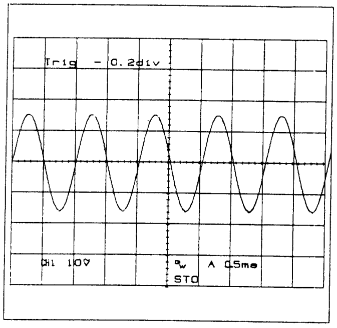
CN101 (9P)
GND
GND
+8V
-8V
FCS
GND
VSP
VSN
GND
① -1.5V
②
③ 2.5V
④
⑤
⑥
⑦
⑧
⑨
+80V
+140V
W103
DFY-
DFY+
CN503 (3P)
Y-
Y+
CN504 (3P)
X+
X-
CN551 (4P)
P2
G2
CN301 (11P)
100V
170V
10V
GND
IC301
IC302
IC303
CN102 (9P)
GND
INT
ADD
LTS
HPO
+5V
MAG
ROT
BLK
CN556 (2P)
H
GND
CN351 (2P)
COIL
GND
CN151 (2P)
Z AXIS
CN402 (2p)
+10V -10V
HV lead
A401
CRT anode
T1
W401
H
H
K
G1
P1
(X73-2150-00 B/2)
E101
A33-0505-04
PL101 150mA
PL102 150mA
PL103 150mA
CN403(4P)
GND
ILM
-10V
+10V
P1 P2 P3 P4 P5 P6

IC303	:TA78L005AP
Q101, 201, 403, 421 422	:2SC1740S (R, S)
Q102, 103, 106, 107	:2SA1459 (K)
Q104, 105, 108, 109	:2SC1907
Q110, 111	:2SA1360 (Y)
Q112, 113	:2SC3787 (S)
Q202, 214, 215, 402 404, 411	:2S0933ASLN (R, S)
Q203, 204	:2SK583
Q205, 206	:2SA1005 (K)
Q207, 208	:2SA1209 (R, S)
Q209, 210	:2SC1923 (O)
Q211, 212	:2SC2911 (S)
Q301, 306	:2SA1381 (D)
Q302, 307	:2SC2909 (S)
Q303	:2SB1015 (Y)
Q305	:2SD1406 (Y)
Q351	:2SC3940A (R)
Q352	:2SA1534A (R)
Q401	:2SD1666
Q405~407	:2SA1091 (O)
Q409	:2SA1208 (S)
D101~108, 203, 301 310, 401, 408~411	:1SS133
D201, 204, 404~407	:1SS83
D202	:MA700
D303, 304	:MTZ10JC
D305	:MTZ1JB
D307, 309	:1G4B-42
D308	:S2VB20F
D308	:DHM3FJ60

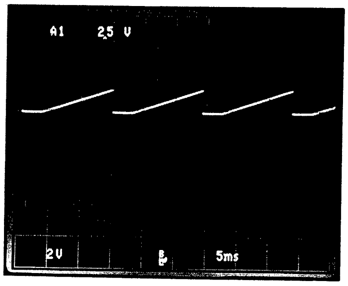
①



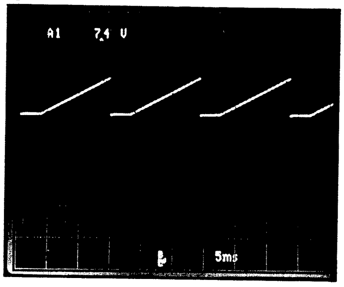
②



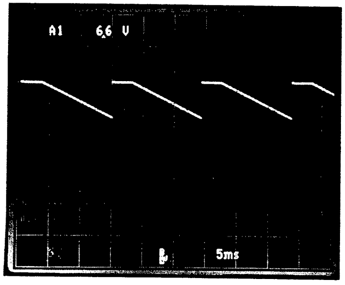
③



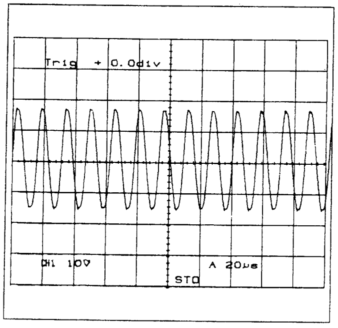
④



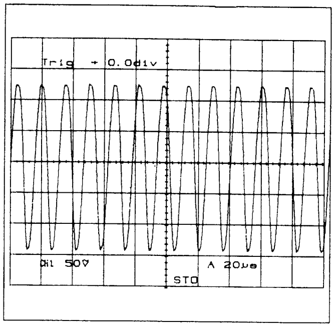
⑤



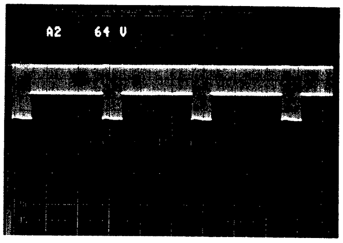
⑥



⑦

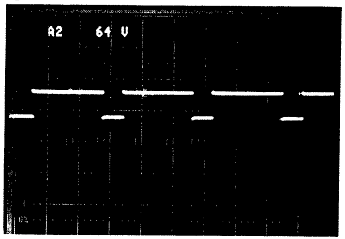


⑧



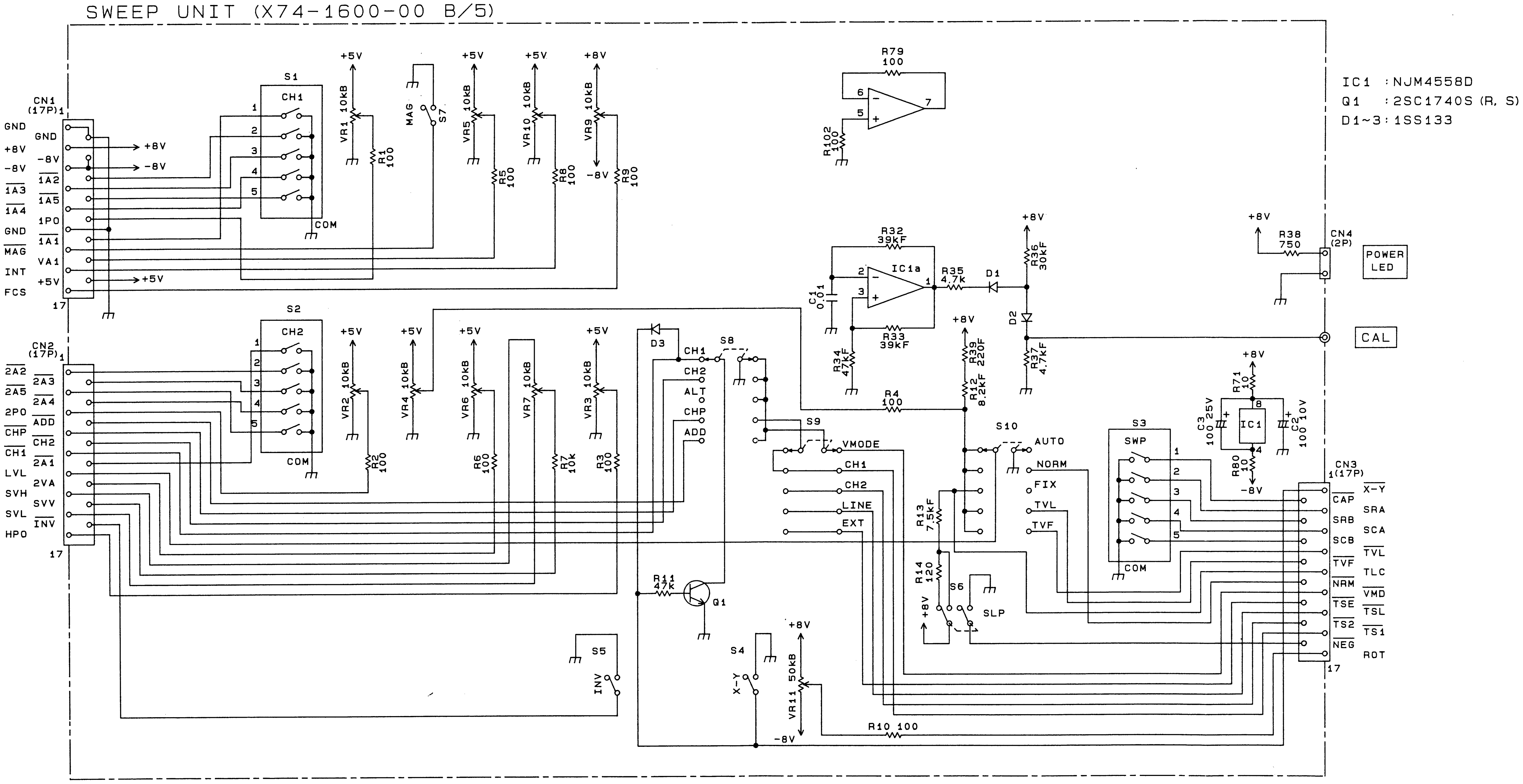
CH1 50V STO A 1ms

⑨



CH1 50V / STO A 1ms

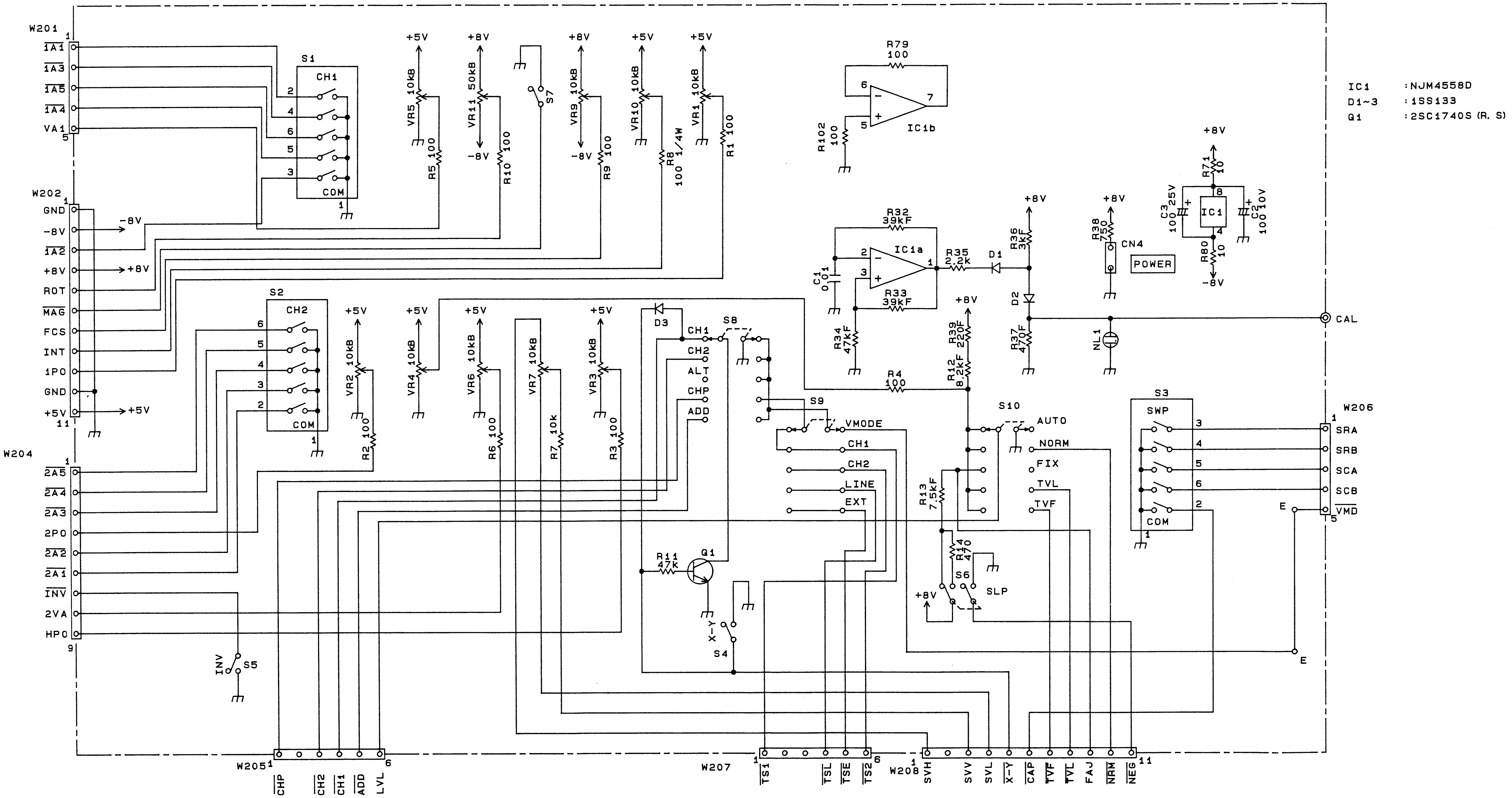
CS-4125 (~S/NO.7121000) SCHEMATIC DIAGRAM


SWEEP UNIT (X74-1600-00 B/5)
CN1 (17P)
GND
+8V
-8V
1A3
1A4
GND
MAG
INT
FCS
GND
-8V
1A2
1A5
1PO
1A1
VA1
+5V
17
S1
CH1
COM
VR1 10kB
R1 100
MAG
S7
VR5 10kB
R5 100
VR10 10kB
R8 100
VR9 10kB
R9 100
+5V
+8V
-8V
R79 100
R102 100
CN2 (17P)
2A2
2A5
2PO
CHP
CH1
LVL
SVH
SVL
HPO
2A3
2A4
ADD
CH2
2A1
2VA
SVV
INV
S2
CH2
VR2 10kB
R2 100
VR4 10kB
VR6 10kB
R6 100
VR7 10kB
R7 10k
VR3 10kB
R3 100
D3
S8
CH1
CH2
ALT
CHP
ADD
S9
VMODE
CH1
CH2
LINE
EXT
R32 39kF
IC1a
C1 0.01
R33 39kF
R34 47kF
R35 4.7k
D1
D2
R36 30kF
R37 4.7kF
R39 220F
R12 8.2kF
R4 100
S10
AUTO
NORM
FIX
TVL
TVF
R13 7.5kF
R14 120
S6
SLP
R11 47k
Q1
S5
INV
S4
X-Y
VR11 50kB
R10 100
R38 750
CN4 (2P)
POWER LED
CAL
R71 10
C3 100 25V
IC1
C2 100 10V
R80 10
S3
SWP
COM
CN3 1(17P)
CAP
SRB
SCB
TVF
NRM
TSE
TS2
NEG
X-Y
SRA
SCA
TVL
TLC
VMD
TSL
TS1
ROT

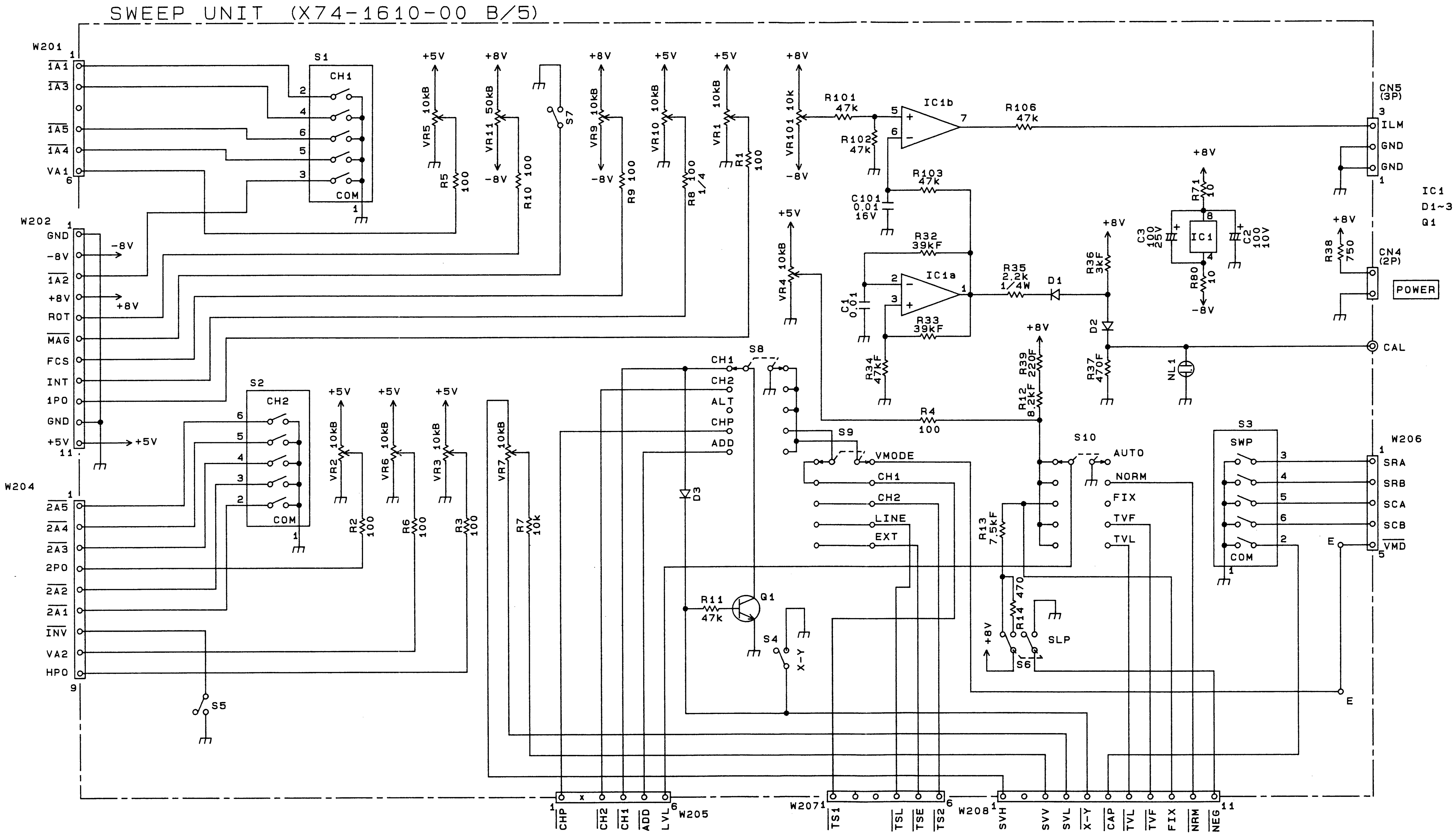
IC1 : NJM4558D
Q1 : 2SC1740S (R, S)
D1~3 : 1SS133

CS-4125 SCHEMATIC DIAGRAM

SWEEP UNIT (X74-1610-01 B/5)


W201
1A1
1A3
1A5
1A4
VA1
S1
CH1
COM
+5V
+8V
VR5 10kB
R5 100
VR11 50kB
R10 100
-8V
S7
VR9 10kB
R9 100
VR10 10kB
R8 100 1/4W
VR1 10kB
R1 100
R79 100
IC1b
R102 100
IC1 :NJM4558D
D1~3 :1SS133
Q1 :2SC1740S (R, S)
W202
GND
-8V
1A2
+8V
ROT
MAG
FCS
INT
1PO
GND
+5V
R32 39kF
IC1a
C1 0.01
R33 39kF
R34 47kF
R35 2.2k
D1
D2
R36 3kF
R37 470F
R38 750
CN4
POWER
R71 10
R80 10
C3 100 25V
C2 100 10V
CAL
NL1
R39 220F
R12 8.2kF
R4 100
S2
CH2
VR2 10kB
R2 100
VR4 10kB
VR6 10kB
R6 100
VR7 10kB
R7 10k
VR3 10kB
R3 100
D3
CH1
CH2
ALT
CHP
ADD
S8
S9
VMODE
LINE
EXT
S10
AUTO
NORM
FIX
TVL
TVF
R13 7.5kF
R14 470
S6
SLP
S3
SWP
W206
SRA
SRB
SCA
SCB
VMD
E
W204
2A5
2A4
2A3
2PO
2A2
2A1
INV
2VA
HPO
R11 47k
Q1
X-Y
S4
S5
W205
CHP
CH2
CH1
ADD
LVL
W207
TS1
TSL
TSE
TS2
W208
SVH
SVV
SVL
X-Y
CAP
TVF
TVL
FAJ
NRM
NEG

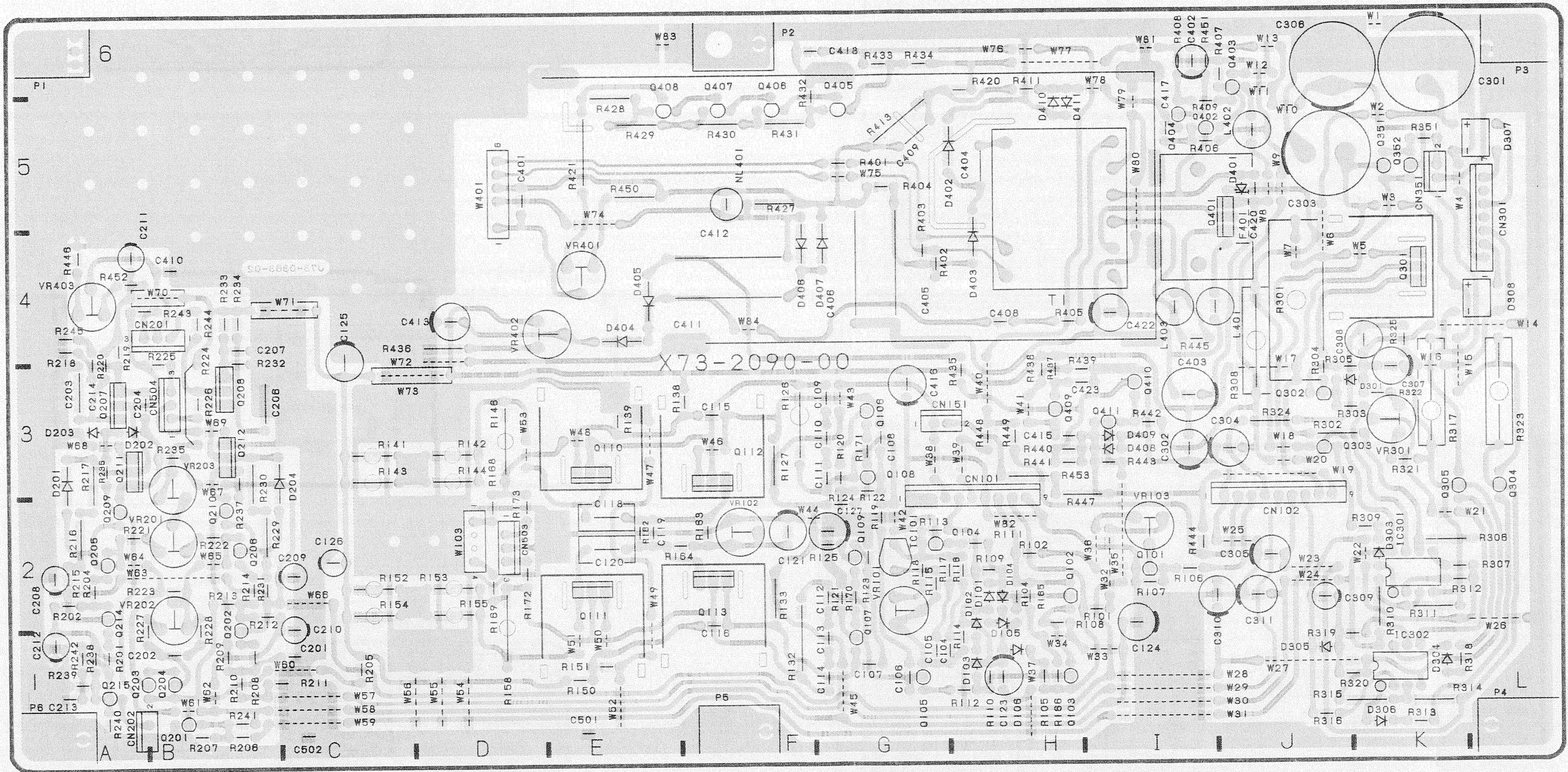
CS-4135 SCHEMATIC DIAGRAM


SWEEP UNIT (X74-1610-00 B/5)
W201
1A1
1A3
1A5
1A4
VA1
S1
CH1
COM
W202
GND
-8V
1A2
+8V
ROT
MAG
FCS
INT
1PO
GND
+5V
W204
2A5
2A4
2A3
2PO
2A2
2A1
INV
VA2
HPO
S2
CH2
COM
S5
VR5 10kB
R5 100
VR11 50kB
R10 100
S7
VR9 10kB
R9 100
VR10 10kB
R8 100 1/4
VR1 10kB
R1 100
VR2 10kB
R2 100
VR6 10kB
R6 100
VR3 10kB
R3 100
VR7 10kB
R7 10k
VR101 10k
R101 47k
R102 47k
IC1b
R106 47k
C101 0.01 16V
R103 47k
VR4 10kB
R32 39kF
IC1a
R33 39kF
C1 0.01
R34 47kF
R35 2.2k 1/4W
D1
D2
R36 3kF
R37 470F
R39 220F
R12 8.2kF
R4 100
NL1
C3 100 25V
IC1
C2 100 10V
R71 10
R80 10
R38 750
CN5 (3P)
ILM
GND
GND
CN4 (2P)
POWER
CAL
S8
CH1
CH2
ALT
CHP
ADD
S9
VMODE
CH1
CH2
LINE
EXT
D3
R11 47k
Q1
S4
X-Y
S10
AUTO
NORM
FIX
TVF
TVL
R13 7.5kF
R14 470
S6
SLP
S3
SWP
COM
W206
SRA
SRB
SCA
SCB
VMD
E
W205
CHP
CH2
CH1
ADD
LVL
W207
TS1
TSL
TSE
TS2
W208
SVH
SVV
SVL
X-Y
CAP
TVL
TVF
FIX
NRM
NEG
+5V
+8V
-8V

IC1 :NJM4558D
D1~3 :1SS133
Q1 :2SC1740S (R, S)

CS-4125 (~S/NO.7121000) P.C. BOARD

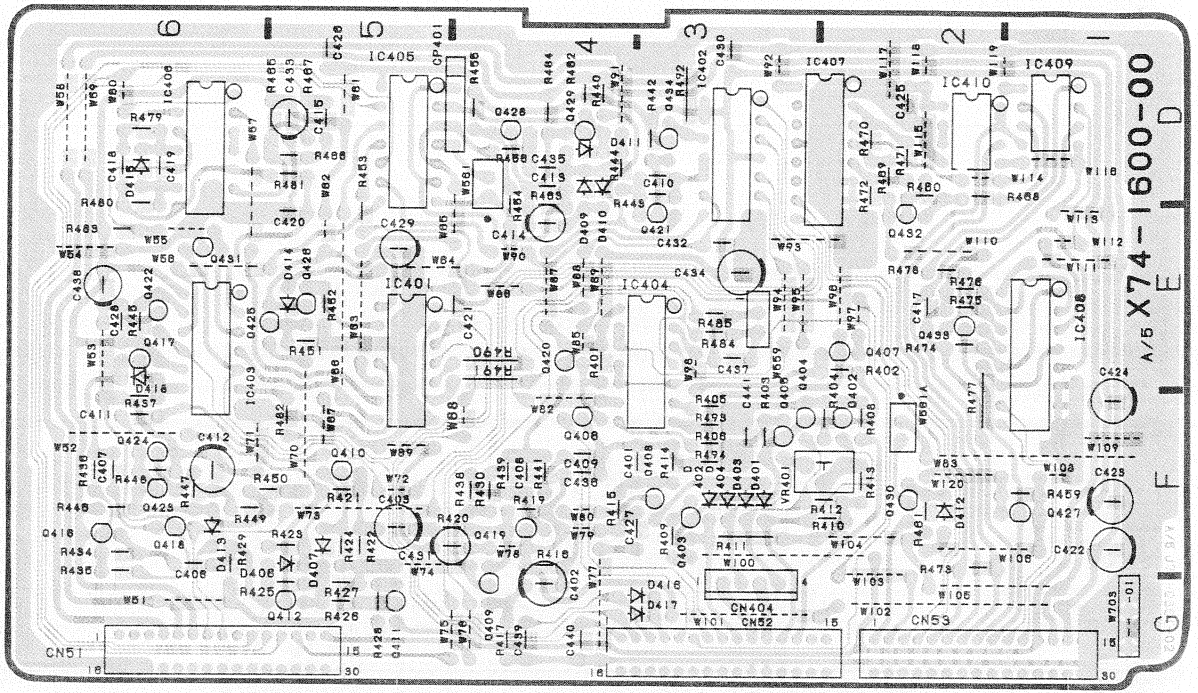
FINAL UNIT (X73-2090-00)


X73-2090-00
P1
P2
P3
P4
P5
P6
T1
CN101
CN102
CN151
CN201
CN301
CN504
CN503
VR401
VR402
VR403
VR101
VR102
VR103
VR201
VR202
VR203
VR301
IC101
IC301
IC302
NL401
F401
C306
C301
W1
W2
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L

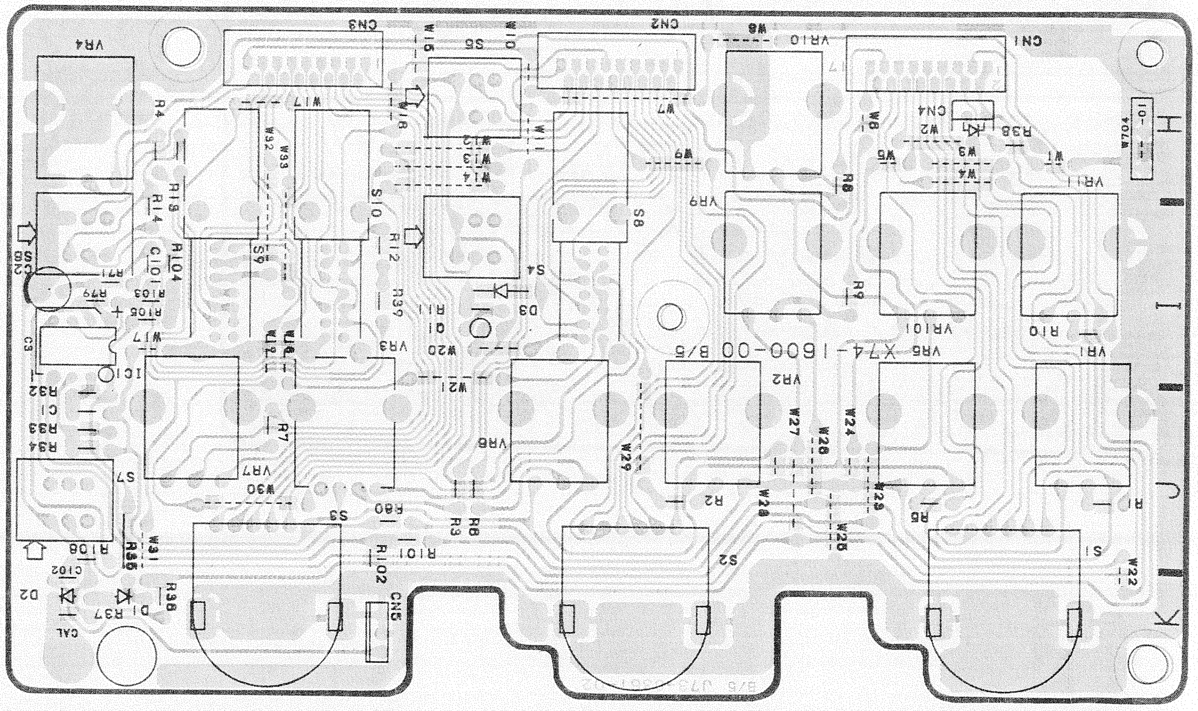
CS-4125 (~S/NO.7121000) P.C. BOARD

SWEEP UNIT (X74-1600-00)

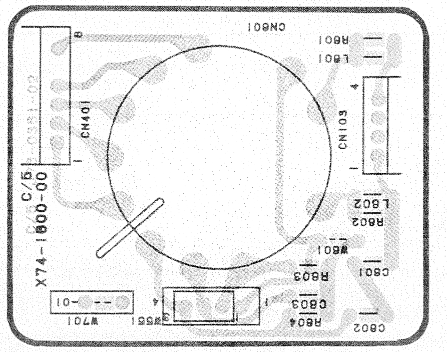
Pattern side view

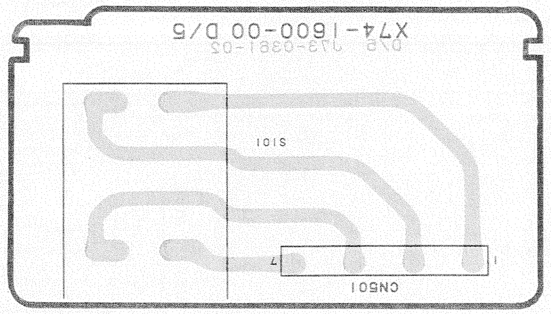

X74-1600-00
A/5
CN51
CN52
CN53
CN404

Pattern side view

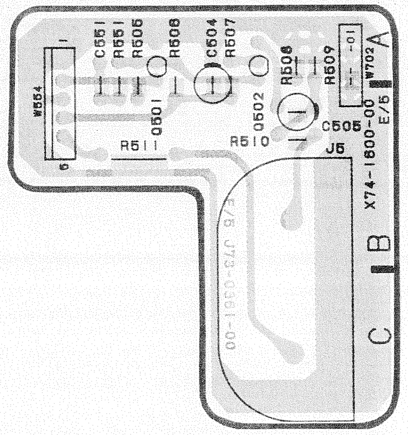

CN1
CN2
CN3
CN4
CN5

Pattern side view


X74-1600-00
C/5
CN401
CN103

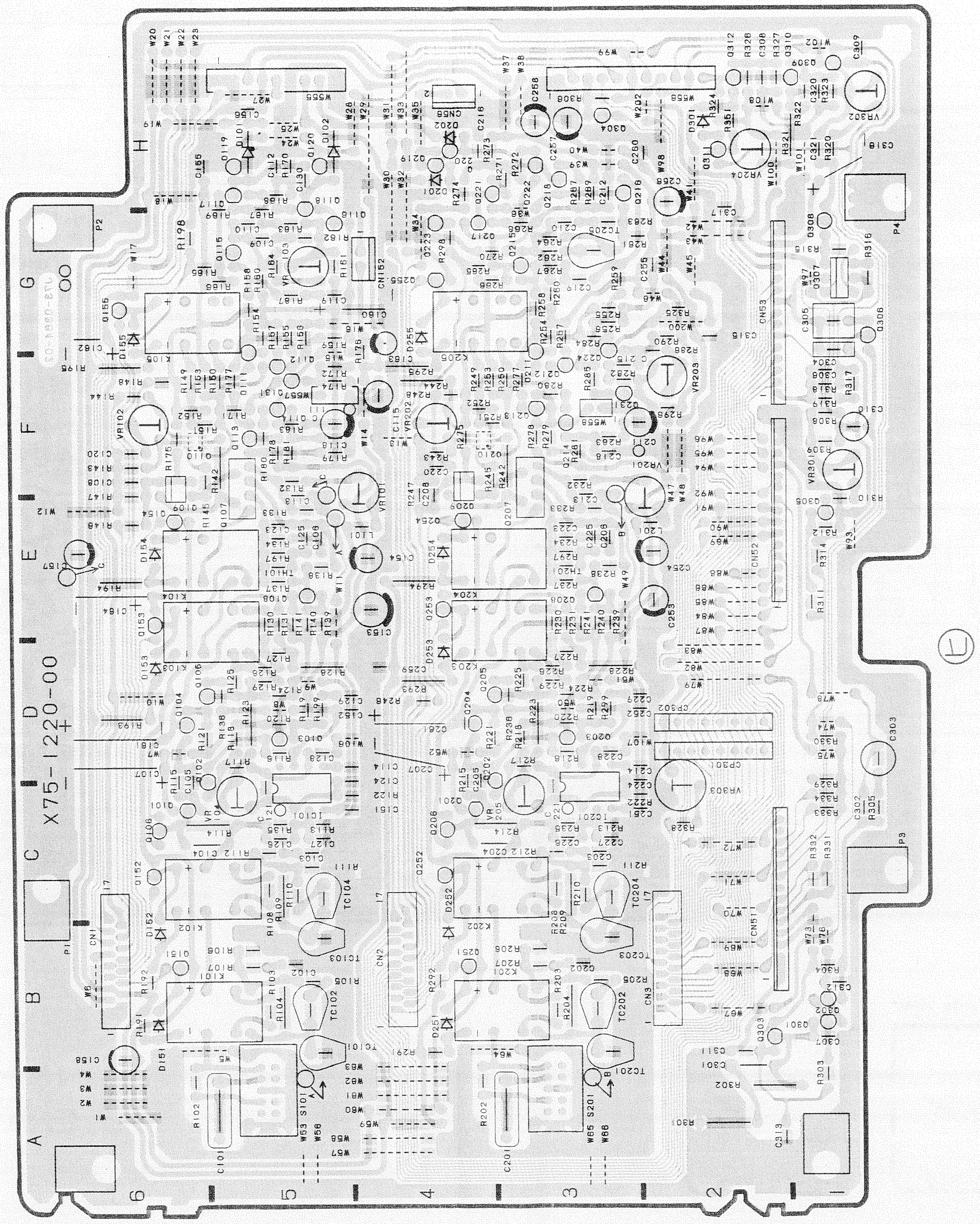

X74-1600-00 D/5
S101
CN501

Pattern side view


X74-1600-00
E/5
J5

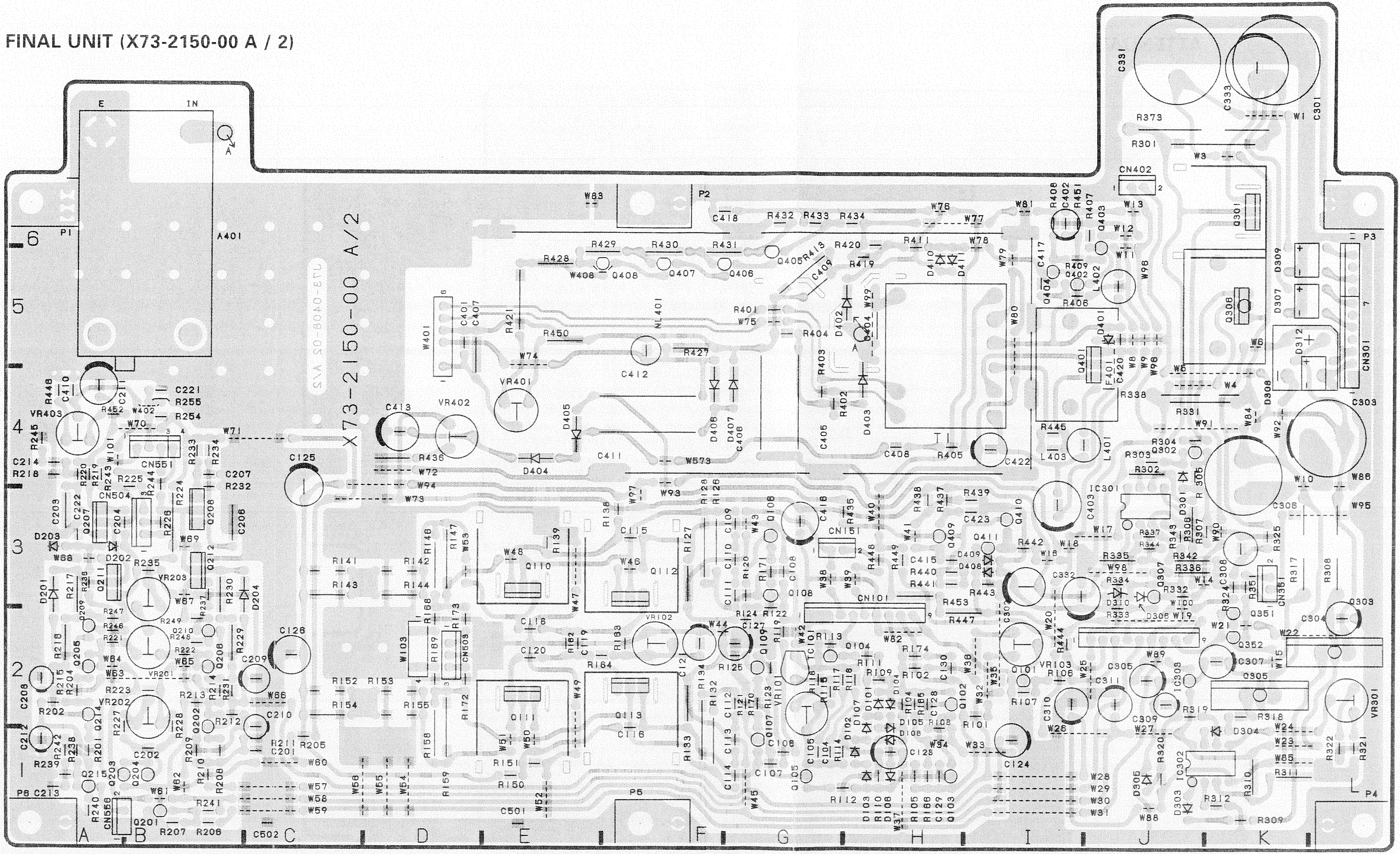
CS-4125 (~S/NO.7121000) P.C. BOARD

ATTENUATOR UNIT (X75-1220-00)


X75-1220-00
A
B
C
D
E
F
G
H
1
2
3
4
5
6

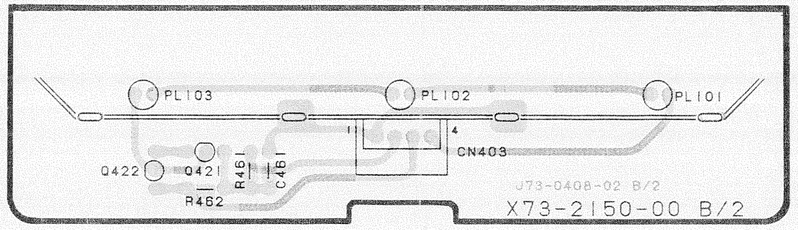
CS-4125/CS-4135 P.C. BOARD

FINAL UNIT (X73-2150-00 A / 2)



X73-2150-00 A/2
J73-0408-02 A/2
E
IN
P1
A401
P2
P3
P4
P5
P6
CN402
CN301
CN551
CN504
CN151
CN101
CN503
CN556
CN351
C331
C333
C301
C303
VR401
VR402
VR403
VR102
VR103
VR301
NL401
IC301
IC302
1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K

Pattern side view

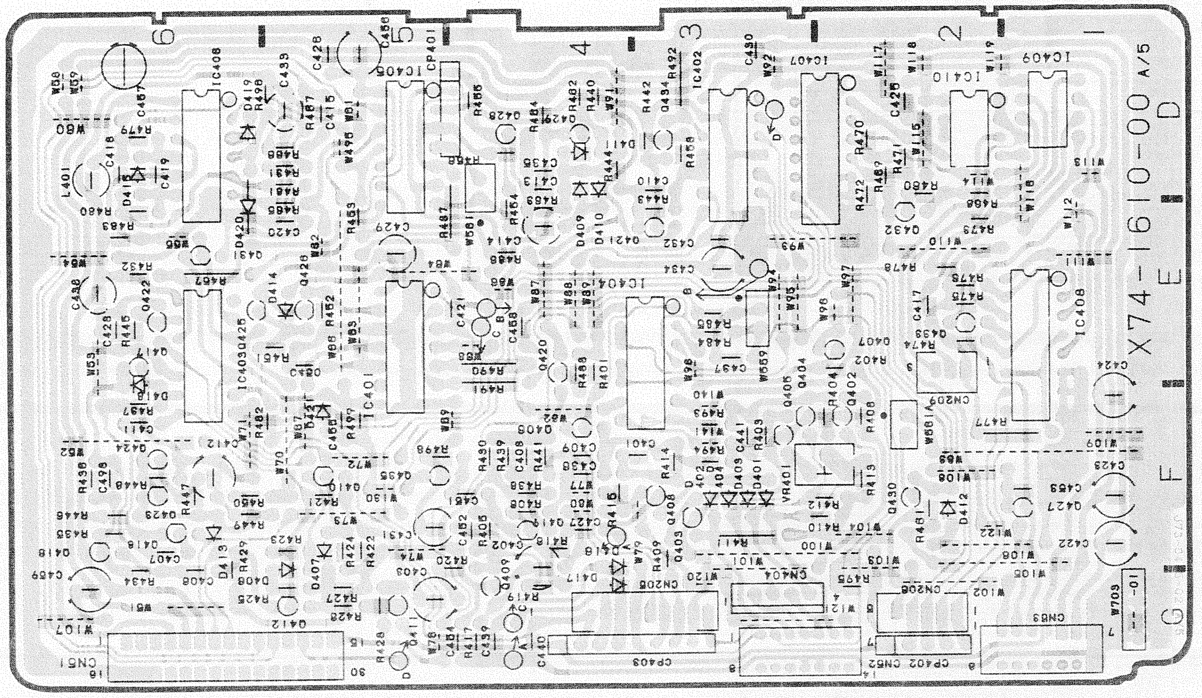


PL103
PL102
PL101
CN403
Q422
Q421
R461
C461
R462
J73-0408-02 B/2
X73-2150-00 B/2

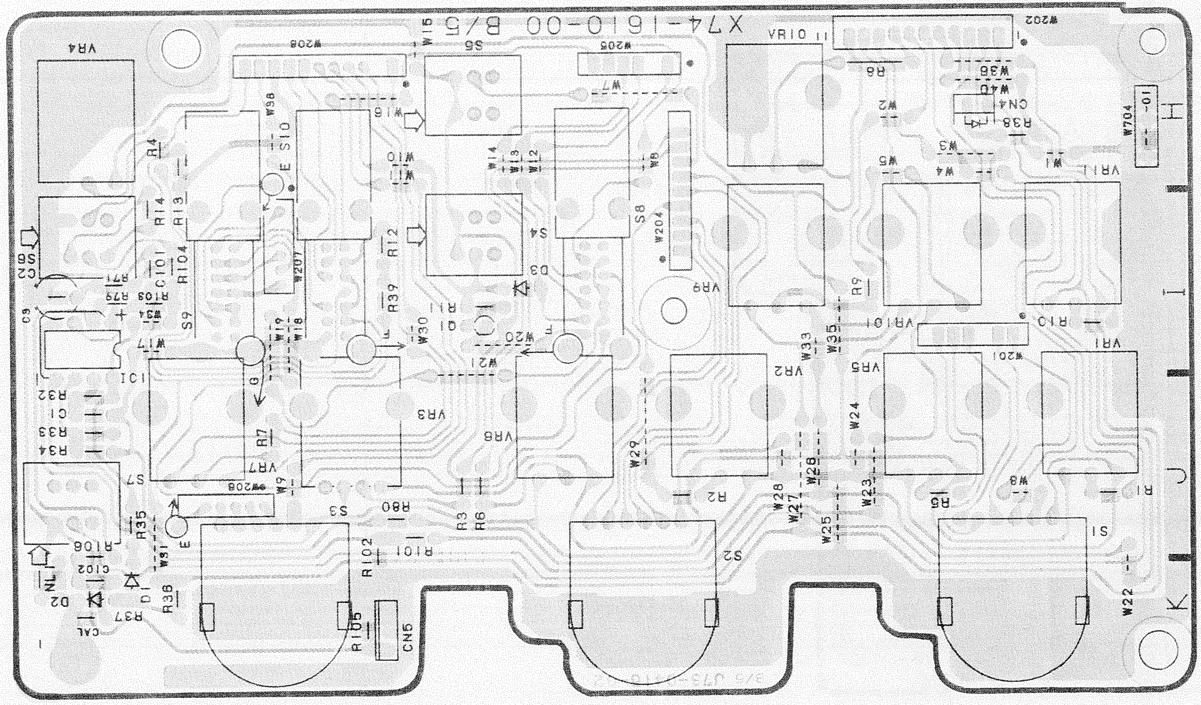
CS-4125/CS-4135 P.C. BOARD

SWEEP UNIT (X74-1610-0X)

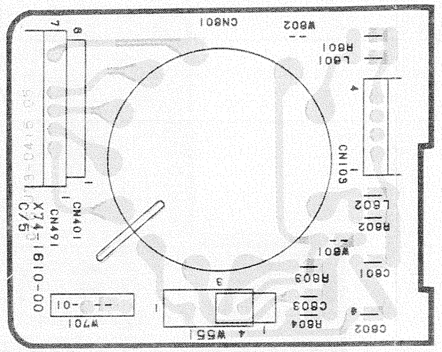
Pattern side view

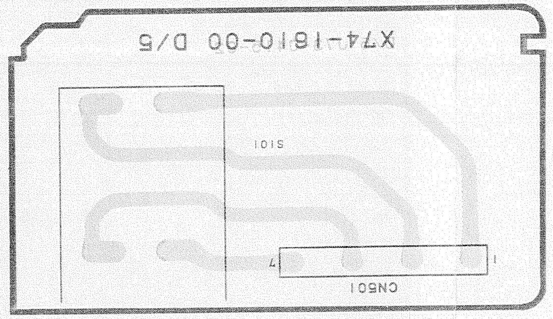

X74-1610-00 A/5
1
2
3
4
5
6
D
E
F
G

Pattern side view

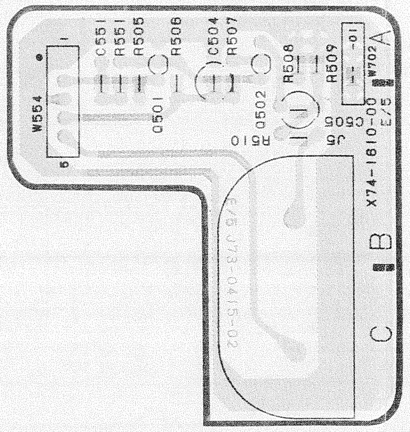

X74-1610-00 B/5
H
I
J
K

Pattern side view


X74-1610-00 C/5

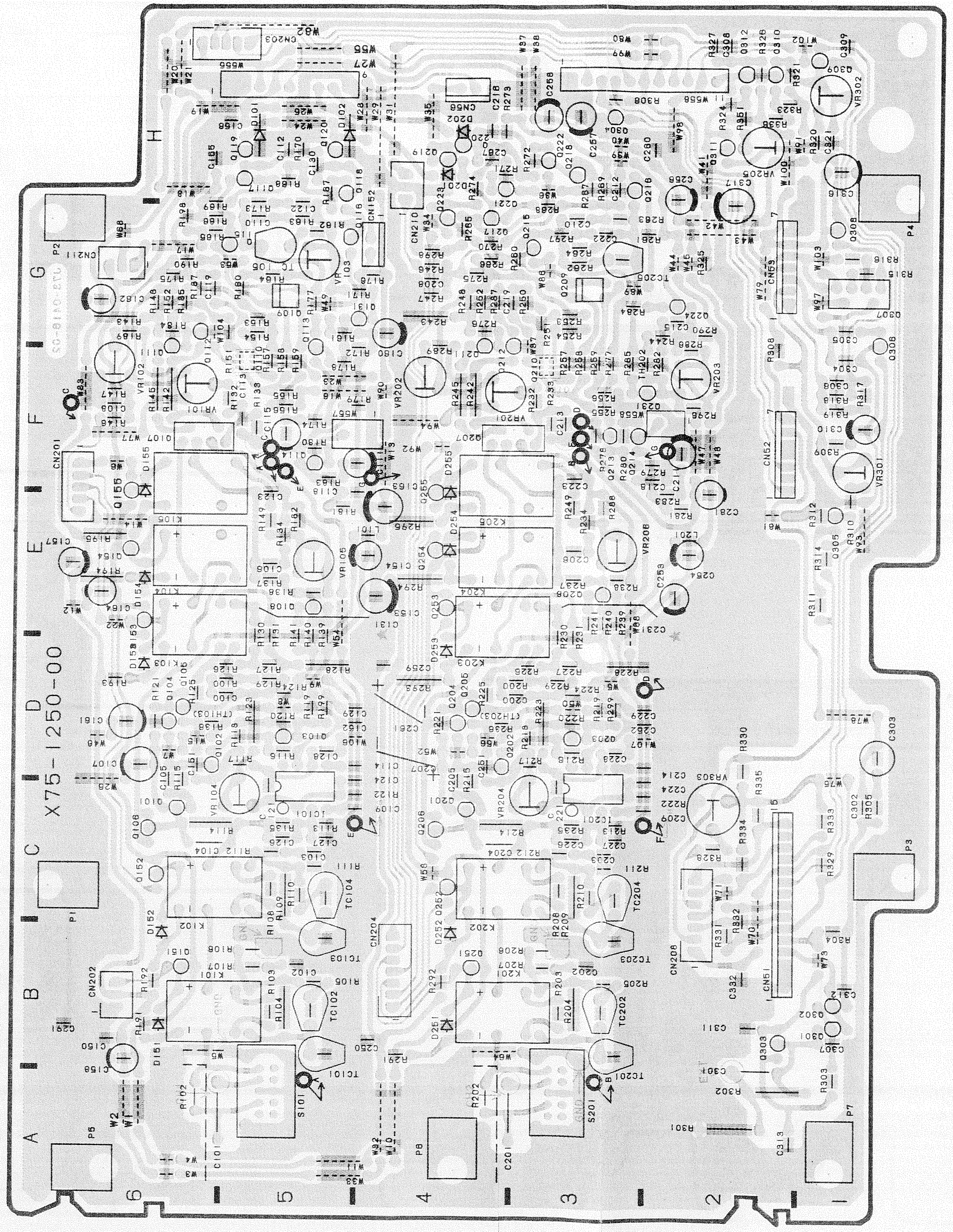

X74-1610-00 D/5
S101
CN501

Pattern side view

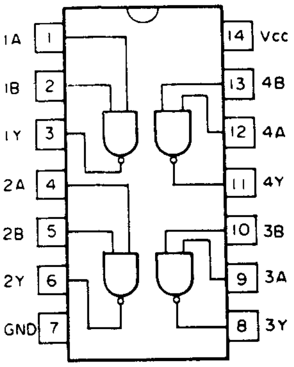

X74-1610-00 E/5
A
B
C

CS-4125/CS-4135 P.C. BOARD

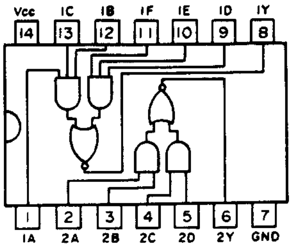
ATTENUATOR UNIT (X75-1250-00)



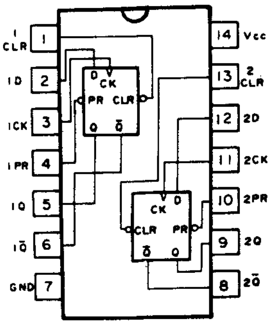
SEMICONDUCTORS


1A
1B
1Y
2A
2B
2Y
GND
1
2
3
4
5
6
7
14
13
12
11
10
9
8
Vcc
4B
4A
4Y
3B
3A
3Y

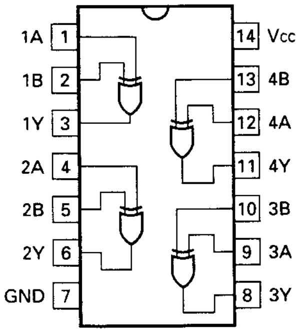
SN74LS00N


Vcc
1C
1B
1F
1E
1D
1Y
14
13
12
11
10
9
8
1
2
3
4
5
6
7
1A
2A
2B
2C
2D
2Y
GND

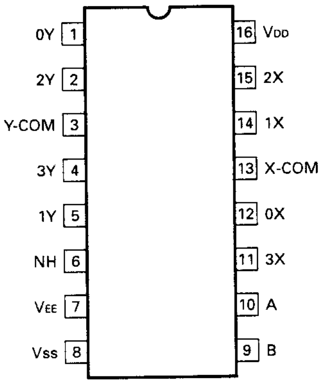
SN74LS51N


1 CLR
1D
1CK
1PR
1Q
1Q̄
GND
1
2
3
4
5
6
7
D
CK
PR
CLR
Q
Q̄
14
13
12
11
10
9
8
Vcc
2 CLR
2D
2CK
2PR
2Q
2Q̄

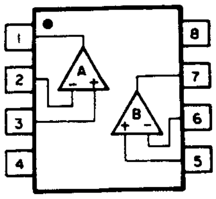
SN74AS74AN
SN74LS74AN


1A
1B
1Y
2A
2B
2Y
GND
1
2
3
4
5
6
7
14
13
12
11
10
9
8
Vcc
4B
4A
4Y
3B
3A
3Y

SN74ALS86N
SN74LS86AN

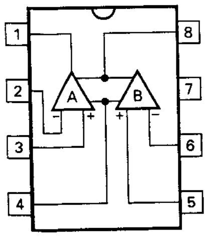

0Y
2Y
Y-COM
3Y
1Y
NH
VEE
VSS
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
VDD
2X
1X
X-COM
0X
3X
A
B

TC4052BP


1
2
3
4
8
7
6
5
A
B
−
+
+
−

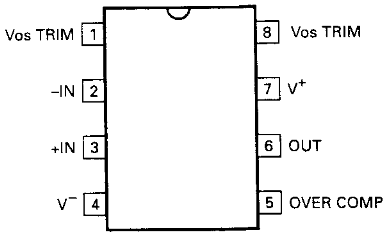
Pin name
1. A OUTPUT
2. A (−) INPUT
3. A (+) INPUT
4. V⁻
5. B (+) INPUT
6. B (−) INPUT
7. B OUTPUT
8. V⁺

NJM4558


1
2
3
4
8
7
6
5
A
B
−
+
+
−

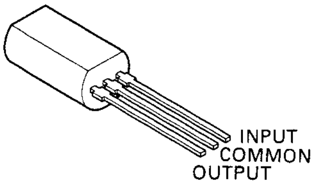
Pin name
1. OUTPUT A
2. INVERTING INPUT A
3. NON-INVERTING INPUT A
4. V⁻
5. NON-INVERTING INPUT B
6. INVERTING INPUT B
7. OUTPUT B
8. V⁺

LF412CN

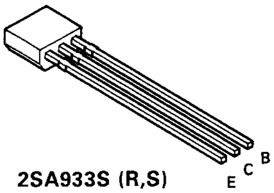

Vos TRIM
−IN
+IN
V⁻
1
2
3
4
8
7
6
5
Vos TRIM
V⁺
OUT
OVER COMP

LT1097CN8

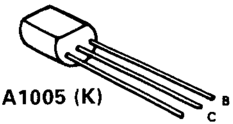
SEMICONDUCTORS


INPUT
COMMON
OUTPUT

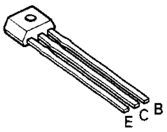
TA78L005AP



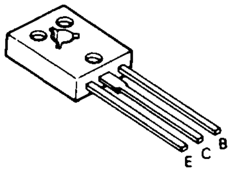
2SA933S (R,S)
2SA933ASLN (R,S)
2SA1564
2SC1740S (R,S)
2SC2926S (R,Q)



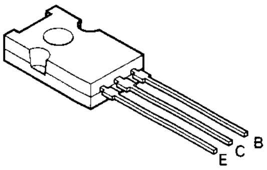
2SA1005 (K)
2SA1091 (O)
2SA1208 (S)
2SA1534A (R)
2SC1906
2SC1907
2SC1923 (O)
2SC2909 (S)
2SC2910 (S)
2SC3940A (R)



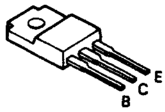
2SA1174 (E,F)
2SA1459 (K)
2SA1459 (L)
2SC3732 (L)



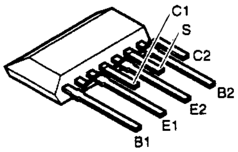
2SA1209 (S)
2SA1381 (D)
2SC2911 (S)



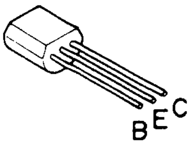
2SA1360 (Y)



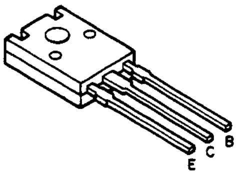
2SB1015 (Y)
2SD1406 (Y)


C1
S
C2
B2
E2
E1
B1

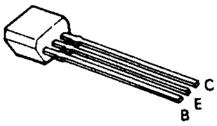
2SC3381 (GR)



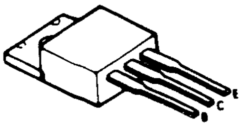
2SC3779 (D)



2SC3787 (S)

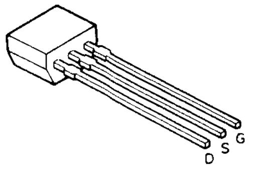


2SC4049

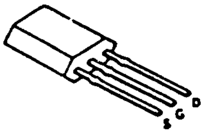


2SD1666 (R)

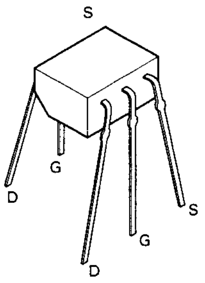
SEMICONDUCTORS



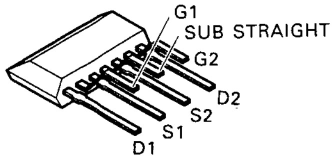
2SK161 (GR)



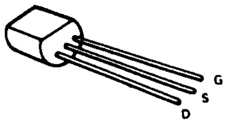
2SK304 (E)



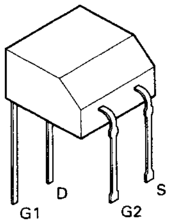
2SK332 (E)


G1
SUB STRAIGHT
G2
D2
S2
S1
D1

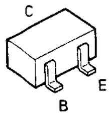
2SK389 (GR)



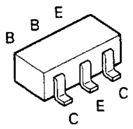
2SK583



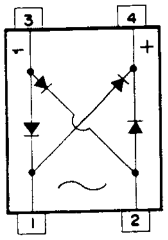
3SK73



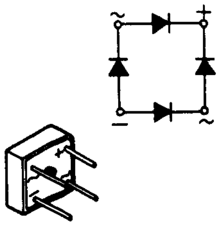
DTA114Y (S)
DTC114Y (S)



IMX4



1G4B-42



S2VB20F